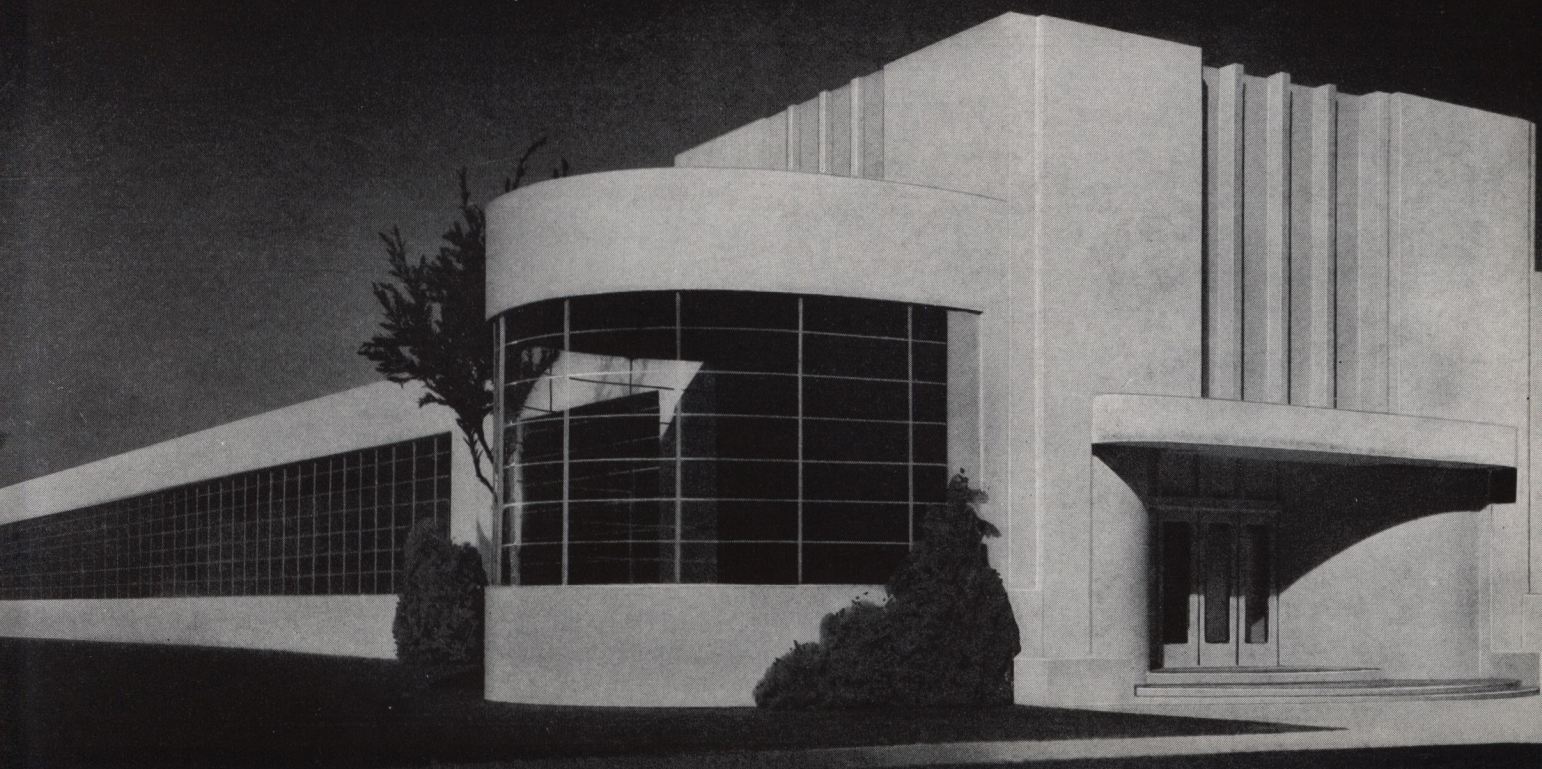


KOPPERS

**BUILT-UP
ROOFING
FLASHING
DAMPPROOFING
WATERPROOFING
TAR-BASE PAINTS**



THE ADVANTAGES OF THE FLAT DECK ROOFS

Flat roof decks are economical to construct and maintain and they are particularly useful on two or three-story buildings erected on foundations designed to carry additional stories. They are usually more pleasing architecturally; they often permit better ventilation and they make possible the high and low bay type of construction which delivers better light in industrial buildings.

THE ADVANTAGES OF COAL TAR PITCH FOR FLAT ROOFS

Two important questions should be asked about any roofing to be applied on flat decks:

1. Can it resist prolonged contact with water without deteriorating?
2. Does it have the ability to heal itself automatically?

Roofs built with KOPPERS Coal Tar Pitch **do** resist water and they **do** heal themselves.

1. RESISTANCE TO WATER. Prolonged contact with water is a condition almost impossible to avoid on flat roofs. Poor drainage, low spots, or settlement of the building may cause it. Service records of 15 to 50 years by coal tar pitch roofs with little or no attention prove the resistance of tar to water. KOPPERS Coal Tar Pitch is practically insoluble in water. None of its constituents has more than a slight water solubility. It contains no added fillers that would induce water absorption or emulsification.

2. THE SELF-HEALING PROPERTY. Settlement of a building, warping of timbers and many other things can cause cracks in a roof. However, the vital consideration is whether these cracks are permanent if they do appear. Coal tar pitch has a property technically known as "cold flow" and even at ordinary temperatures a crack heals itself. This can clearly be seen in photomicrographs which show the sides of the cracks moving slowly together until complete fusion takes place and the pitch again forms a continuous layer. Coal tar pitch roofs readily conform to slight irregularities in the deck and yet remain waterproof.

THE EXTRA-HEAVY TOP POURING. Additional protection is given a KOPPERS Roof by the extra-heavy top pouring of roofing pitch. This amounts to approximately 70 pounds for pitch for every 100 square feet of roof surface.

THE GRAVEL OR SLAG SURFACE. The gravel or slag surface on a KOPPERS Roof provides an armor against hail, driving rain, sleet and snow. It also provides additional wearing surface which protects the roof against foot traffic. Roofs with gravel or slag surfaces cling to the deck even in severe wind storms.

THE EXTRA SATURATION OF THE FELT. The tarred felt used in KOPPERS Roofs absorbs one and one-half times its own weight of coal tar pitch during saturation. This large proportion of saturant insures high strength and maximum durability.

PRESERVATIVE AND NON-CORROSIVE ACTION. KOPPERS Old Style Pitch contains coal tar creosote, which is unsurpassed as a preservative for wood, felt or other materials which are used in roofing construction. It contains no mineral acids, alkalies, or corrosive substances and therefore cannot corrode metal surfaces with which it may come in contact.

MATERIALS SPECIFICATIONS

KOPPERS Old Style Pitch complies with the following standard specifications:

U. S. Government Master Specifications R. P-381 (Federal Specifications Board)—"Coal Tar Pitch for Roofing," A. S. T. M. D-252-27—"High Bitumen Coal Tar Pitch for Use in Constructing Built-up Roofs Surfaced with Slag or Gravel."

Underwriters' Laboratories.

KOPPERS Approved Tarred Felt meets the following specifications:

The Underwriters' Laboratories.

Federal Specifications No. HH-F-201 and A. S. T. M. D-227-27.

WEIGHTS, CONTAINERS, ETC. KOPPERS Old Style Pitch is sold in barrels or metal containers, 450 to 500 lbs.

KOPPERS Tarred Felts are sold in standard size rolls, 32 inches wide and containing 432 square feet, except when otherwise specified. KOPPERS Approved Tarred Felt, the highest grade of roofing and waterproofing felt and the grade used in KOPPERS Bonded Roofs, has an approximate average weight of 15 lbs. per 100 sq. ft., or 65 lbs. per roll.

BOND. Maintenance Bonds on KOPPERS Roofing and Flashings are issued by the Koppers Products Company and the National Surety Corporation on roofs constructed according to Koppers specifications and when applied by roofing contractors approved in writing by the Koppers Products Company. When KOPPERS Bonded Roofing with KOPPERS Bonded Flashings are specified, this company will have an inspector on the job to see that it is constructed according to the specifications. The bond protects the building owner against any roofing maintenance expense due to leakage for the period of the bond. It is issued for 10, 15 or 20 years.

Note—The Koppers Products Company will issue Guarantee Bonds in such portions of the United States as are covered by their inspection service.

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KOPPERS 20-YEAR ROOFING SPECIFICATION No. 1

5-Ply Over Wood Decks
[Maximum Incline Two (2) Inches Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS Twenty Year Type, Specification No. 1, 5-Ply Over Boards.

(When Bond is required add the following sentence.) A KOPPERS 20-Year Guarantee Bond shall be furnished by the Roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be clean, smooth and free from knot holes, large cracks, and loose boards. The lumber shall be seasoned or treated. If the roof deck is inclined it shall be properly sloped to the outlets.



APPLICATION. First—Lay one (1) thickness of KOPPERS sheathing paper, weighing not less than five (5) pounds per one hundred (100) square feet, lapping each sheet one (1) inch over the preceding sheet.

Second—Lay over the entire surface two (2) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet seventeen (17) inches over the preceding sheet. Nail as often as necessary to hold the sheets in place and until the remaining felt is laid.

Third—Apply over the entire surface a uniform coating of KOPPERS Old Style Pitch.

Fourth—Lay over the entire surface three (3) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet twenty-two (22) inches over the preceding sheet and mopping with KOPPERS Old Style Pitch the full width of the twenty-two (22) inch lap, so that in no place shall felt touch felt. Each sheet shall be nailed not less than two (2) inches from the upper edge, nails to be spaced not more than two (2) feet apart. All nails shall be covered by not less than two (2) plies of KOPPERS Approved Tarred Felt.

Fifth—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be dry and free from dirt, and from one-fourth ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size.

GENERAL. All tarred felt shall be laid without wrinkles or buckles. Nailing of all felt shall be done with simplex flat head roofing nails or with seven-eighths ($\frac{7}{8}$) inch galvanized roof nails driven through flat tin discs.

For each one hundred (100) square feet of completed roofing surface there shall be used not less than one hundred and fifty (150) pounds of KOPPERS Old Style Pitch. Pitch shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

BOND. If a KOPPERS 20-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company, who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

INSULATION. Complete information and specifications for applying insulation under KOPPERS Roofing will be sent on request.

KOPPERS 15-YEAR ROOFING SPECIFICATION No. 2

4-Ply Over Wood Decks
[Maximum Incline Two (2) Inches Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS 15-Year Type, Specification No. 2, 4-Ply Over Boards.

(When Bond is required add the following sentence.) A KOPPERS 15-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be clean, smooth and free from knot holes, large cracks and loose boards. The lumber shall be seasoned or treated. If the roof deck is inclined it shall be properly sloped to the outlets.

APPLICATION. First—Lay one (1) thickness of KOPPERS sheathing paper, weighing not less than five (5) pounds per one hundred (100) square feet, lapping each sheet one (1) inch over the preceding sheet.

Second—Lay over the entire surface two (2) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet seventeen (17) inches over the preceding sheet. Nail as often as necessary to hold the sheets in place and until the remaining felt is laid.

Third—Apply over the entire surface a uniform coating of KOPPERS Old Style Pitch.

Fourth—Lay over the entire surface two (2) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet seventeen (17) inches over the preceding sheet and mopping with KOPPERS Old Style Pitch the full width of the seventeen (17) inch lap, so that in no place shall felt touch felt. Each sheet shall be nailed not less than two (2) inches from the upper edge, nails to be spaced not more than two (2) feet apart.

Fifth—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be dry and free from dirt, and from one-fourth ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size.

GENERAL. All tarred felt shall be laid without wrinkles or buckles. Nailing of all felt shall be done with simplex flat head roofing nails or with seven-eighths ($\frac{7}{8}$) inch galvanized roof nails driven through flat tin discs.

For each one hundred (100) square feet of complete roofing surface there shall be used not less than one hundred and twenty-five (125) pounds of KOPPERS Old Style Pitch. Pitch shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

BOND. If a KOPPERS 15-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company, who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

INSULATION. Complete information and specifications for applying insulation under KOPPERS Roofing will be sent on request.



KOPPERS 10-YEAR STEEP ROOFING SPECIFICATION No. 3

5-Ply Over Wood Decks [Maximum Incline Four (4) Inches
Per Foot and Not Less Than Two (2) Inches Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS 10-Year Steep Type Specification No. 3, 5-Ply Over Boards.

(When Bond is required add the following sentence.) A KOPPERS 10-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be clean, smooth, firm and free from knot holes, large cracks and loose boards. The lumber shall be seasoned or treated. The inclines of the roof deck shall not be more than four (4) inches and not less than two (2) inches to the foot.

APPLICATION. First—Lay one (1) thickness of KOPPERS sheathing paper, weighing not less than five (5) pounds per one hundred (100) square feet, lapping each sheet one (1) inch over the preceding sheet.

Second—Lay over the entire surface five (5) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet twenty-six (26) inches over the preceding sheet. The felt shall be laid across and not up and down the slope of the roof. Nail each sheet with one (1) inch barbed roofing nails through flat tin discs ten (10) inches from the upper edge. The nails shall be

spaced not more than one (1) foot apart, and all nails shall be covered by not less than two (2) plies of felt.

Third—A width of eighteen (18) inches on each sheet shall be mopped uniformly with KOPPERS Old Style Pitch. This mopping shall be held back two (2) inches from the lower edge of each sheet, and shall extend back twenty (20) inches from the lower edge. The finished felt surface shall be smooth and free from pitch drippings.

All felt shall be laid without wrinkles or buckles.

Fourth—Spread with a mop a uniform coating of KOPPERS Type S Asphalt into which, while hot, embed not less than two hundred and fifty (250) pounds of slag for each one hundred (100) square feet. The slag shall be dry and free from dirt, and from one-fourth ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size.

When roofing is applied in damp or cold weather the slag must be heated and applied warm on the roof.

The finished surface shall be broomed clean of all loose slag.

GENERAL. For each one hundred (100) square feet of completed roofing surface there shall be used not less than sixty (60) pounds of KOPPERS Old Style Pitch and not less than forty (40) pounds nor more than fifty (50) pounds of KOPPERS Type S Asphalt.

Pitch and Asphalt shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

Where the steep roof joins the flat roof, the roofing on the flat surface shall be carried up the inclined surface not less than twenty-four (24) inches before the steep roofing is applied.

BOND. If a KOPPERS 10-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company, who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval, and also under the following condition:

KOPPERS Bonded Steep Roofing is to be applied in connection with KOPPERS Bonded Flat Roofing.

INSULATION. Complete information and specifications for applying insulation under KOPPERS Roofing will be sent on request.



KOPPERS SPECIAL 10-YEAR STEEP ROOFING SPECIFICATION No. 4

Over Wood Decks for Inclines
Exceeding Four (4) Inches Per Foot

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS 10-Year Special Steep Type Specification No. 4 Over Boards.

(Where bond is required add the following sentence.) A KOPPERS 10-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be clean, smooth, firm and free from knot holes, large cracks and loose boards. The lumber shall be seasoned or treated.

APPLICATION. First—Lay over the entire surface two (2) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet seventeen (17) inches over the preceding sheet. The felt shall be laid across and not up and down the slope of the roof. Nail each sheet with one (1) inch barbed roofing nails through flat tin discs two (2) inches from the lower edge. Nails shall be spaced not more than eighteen (18) inches apart.

Second—Spread with a mop over the surface thus prepared a uniform coating of KOPPERS Type S Asphalt into which, while hot, embed a sheet of KOPPERS Mineral Surfaced Roofing, lapping each sheet the full nineteen (19) inch selvage. Sheets of KOPPERS mineral surfaced roofing shall be laid across and not up and down the slope of the roof, and shall be securely fastened in place along the selvage side with a double course of one (1) inch barbed roofing nails through flat tin discs, nails in each course to be spaced twelve (12) inches apart and courses staggered. Nailing course nearest the longitudinal center of the sheet shall be held back from the mineral surfacing two inches.

Third—Over the full width of the nineteen (19) inch selvage spread with a mop a uniform coating of KOPPERS Type S Asphalt into which, while hot, thoroughly embed the following sheet of KOPPERS Mineral Surfaced Roofing.

Fourth—There shall be a six (6) inch end lap between adjoining sheets. The underlying sheet of each end lap shall be nailed with eight (8) one (1) inch barbed roofing nails through flat tin discs. Nails to be spaced four (4) inches apart starting two (2) inches from the lower edge of each sheet. Coat the underside of six (6) inch end lap with KOPPERS Type S Asphalt and firmly imbed the overlapping sheet.

All edges and end laps shall be carefully rubbed down to provide proper adhesion.

GENERAL. KOPPERS mineral surfaced roofing shall be cut in strips not exceeding twenty (20) feet in length and shall be stacked flat for sufficient time to allow these strips to become perfectly flat before starting application.

All felts and mineral surfaced roofing shall be laid without wrinkles or buckles.

For each one hundred (100) square feet of completed roofing surface there shall be used not less than fifty (50) pounds of Koppers Type S Asphalt. Asphalt shall not be heated above three hundred, seventy-five (375) degrees, F.

Where the steep roof joins the flat roof, the roofing in the flat surface shall be carried up the inclined surface not less than twenty-four (24) inches before the steep roofing is applied.

BOND. If a KOPPERS 10-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company, who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval, and also under the following condition:

KOPPERS Special Steep Bonded Roofing is to be applied in connection with KOPPERS Bonded Flat Roofing.

INSULATION. Complete information and specifications for applying insulation under KOPPERS Roofing will be sent on request.



KOPPERS 20-YEAR ROOFING SPECIFICATION No. 5

4-Ply Over Poured Concrete or Poured Gypsum [Maximum Incline Two (2) Inches Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

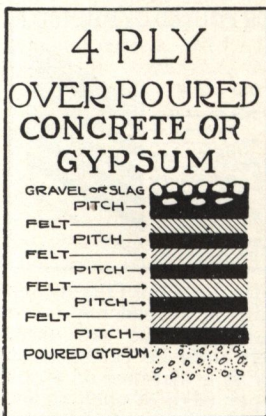
The roofing shall be KOPPERS 20-Year Type Specification No. 5, 4-Ply Over Poured Concrete or Poured Gypsum.

(When Bond is required add the following sentence.) A KOPPERS 20-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be smooth, dry, firm and clean, and if inclined shall be properly sloped to outlets.

Decks or inclines exceeding one (1) inch and less than two (2) inches to the foot shall permit nailing or creosoted wood nailing strips must be set in the concrete flush with its surface, these strips to be spaced three (3) feet apart and placed up and down and not across the slope of the roof.



APPLICATION. First—Apply a uniform coating of KOPPERS Old Style Pitch to the deck.

Second—Lay over the entire surface four (4) full thicknesses of KOPPERS Tarred Felt, lapping each sheet twenty-four and one-half (24½) inches over the preceding sheet, mopping with KOPPERS Old Style Pitch the full twenty-four and one-half (24½) inches on each sheet so that in no place shall felt touch felt.

When nailing is necessary nails should be placed not less than three (3) inches from the

upper edge of each sheet and not more than three (3) feet apart. All nails shall be covered by not less than three (3) plies of felt.

All felts shall be laid without wrinkles or buckles.

Third—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be dry and free from dirt, and from one-fourth (¼) inch to five-eighths (⅝) inch in size.

GENERAL. For each one hundred (100) square feet of completed roofing there shall be used not less than two hundred (200) pounds of KOPPERS Old Style Pitch. Pitch shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

BOND. If a KOPPERS 20-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company, who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

Note—The Koppers Products Company will issue Guarantee Roofing Bonds in such portions of the United States as are covered by their inspection service.

INSULATION. Complete information and specifications for applying insulation under KOPPERS Roofing will be sent on request.

KOPPERS 20-YEAR ROOFING SPECIFICATION No. 6

4-Ply Over Poured Concrete or Poured Gypsum Deck [Maximum Incline One-Quarter (¼) Inch Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be a KOPPERS 20-Year Type Specification No. 6, 4-Ply Over Poured Concrete or Poured Gypsum.

(When Bond is required, add the following sentence.) A KOPPERS 20-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be smooth, dry, firm and clean.

APPLICATION. First—Apply a uniform coating of KOPPERS Old Style Pitch to the deck.

Second—Lay over the entire surface two (2) plies of KOPPERS Approved Tarred Felt, lapping each sheet seventeen (17) inches over the preceding sheet, mopping with KOPPERS Old Style Pitch the full seventeen (17) inches on each sheet so that in no place shall felt touch felt.

Third—Apply a uniform coating of KOPPERS Old Style Pitch.

Fourth—Lay over the entire surface two (2) plies of KOPPERS Approved Tarred Felt lapping each sheet seventeen (17) inches over the preceding sheet, mopping with KOPPERS Old Style Pitch the full seventeen (17) inches on each sheet so that in no place shall felt touch felt.

Fifth—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be dry and free from dirt and from one-fourth (¼) inch to five-eighths (⅝) inch in size.

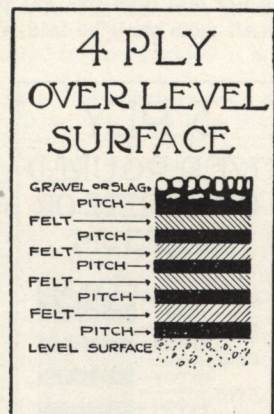
GENERAL. For each one hundred (100) square feet of completed roofing there shall be used not less than two hundred (200) pounds of KOPPERS Old Style Pitch. Pitch shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

Felt shall be laid without wrinkles or buckles.

BOND. If a KOPPERS 20-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company, who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

Note—The Koppers Products Company will issue Guarantee Roofing Bonds in such portions of the United States as are covered by their inspection service.

INSULATION. Complete information and specifications for applying insulation under KOPPERS Roofing will be sent on request.



KOPPERS 15-YEAR ROOFING SPECIFICATION No. 7

3-Ply Over Poured Concrete or Poured Gypsum [Maximum
Incline Two (2) Inches Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be a KOPPERS 15-Year Type Specification No. 7, 3-Ply Over Poured Concrete or Poured Gypsum.

(When Bond is required, add the following sentence.) A KOPPERS 15-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be smooth, dry, firm and clean, and if inclined shall be properly sloped to outlets.

Decks or inclines exceeding one (1) inch and less than two (2) inches to the foot shall permit nailing or creosoted wood nailing strips must be set in the concrete flush with its surface, these strips to be spaced three (3) feet apart and shall be placed up and down and not across the slope of the roof.

APPLICATION. First—Apply a uniform coating of KOPPERS Old Style Pitch to the deck.

Second—Lay over the entire surface three (3) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet twenty-two (22) inches over the preceding sheet, mopping with KOPPERS Old Style Pitch the full twenty-two (22) inches on each sheet so that in no place shall felt touch felt.

When nailing is necessary nails shall be placed not less than three (3) inches from the upper edge of each sheet and not less than three (3) feet apart. All nails shall be covered by not less than two (2) plies of felt.

All felts shall be laid without wrinkles or buckles.

Third—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be dry and free from dirt, and from one-fourth ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size.

GENERAL. For each one hundred (100) square feet of completed roofing there shall be used not less than one hundred and seventy-five (175) pounds of

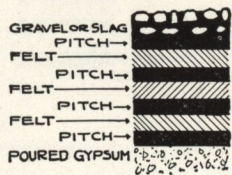
KOPPERS Old Style Pitch. Pitch shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

BOND. If a KOPPERS 15-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company, who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

Note—The Koppers Products Company will issue Guarantee Roofing Bonds in such portions of the United States as are covered by their inspection service.

INSULATION. Complete information and specifications for applying insulation under KOPPERS Roofing will be sent on request.

3 PLY OVER POURED CONCRETE OR GYPSUM



KOPPERS STEEP 10-YEAR ROOFING SPECIFICATION No. 8

4-Ply Over Poured Concrete or Poured Gypsum [Maximum
Incline Four (4) Inches Per Foot and Not Less Than
Two (2) Inches Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)
The roofing shall be KOPPERS Ten Year Steep Type Specification No. 8, 4-Ply Over Poured Concrete or Poured Gypsum.

(When Bond is required add the following sentence.) A KOPPERS 10-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be smooth, dry, firm, clean and should be suitable for nailing. If the Poured Concrete or Poured Gypsum deck does not permit nailing, creosoted wooden nailing strips shall be set in the concrete flush with its surface, these strips to be spaced three (3) feet apart and placed up and down and not across the slope of the roof.

APPLICATION. First—The surface of the deck shall be strip mopped with KOPPERS Old Style Pitch. The strip moppings shall be approximately fifteen (15) inches wide and shall run up and down the slope. Strip moppings shall be spaced not more than forty-five (45) inches apart from center to center.

Second—Lay over the entire surface four (4) thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet twenty-four and one-half ($24\frac{1}{2}$) inches over the preceding sheet. The Approved Tarred Felt shall be laid across the slope of the roof. Nail each sheet with one (1)

inch barbed roofing nails through flat tin discs ten (10) inches from the upper edge. The nails shall be spaced not more than one (1) foot apart unless nailing strips are used. When nailing strips are used, the felt shall be fastened at each nailing strip with two (2) nails at a distance of eight (8) and ten (10) inches from the upper edge of each sheet.

Third—A width of eighteen (18) inches on each sheet shall be mopped uniformly with KOPPERS Old Style Pitch. This mopping shall be held back two (2) inches from the lower edge of each sheet and shall extend back twenty (20) inches from the lower edge. The finished felt surface shall be smooth and free of pitch drippings. KOPPERS Approved Tarred Felt shall be laid without wrinkles or buckles.

Fourth—Spread with a mop a uniform coating of KOPPERS Type S Asphalt over the entire surface into which, while hot, embed not less than two hundred and fifty (250) pounds of slag per one hundred (100) square feet. The slag shall be dry and free from dirt, and from one-fourth ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size.

When roofing is applied in damp or cold weather the slag must be heated and applied warm on the roof. The finished surface shall be broomed clean of all loose slag.

GENERAL. For each one hundred (100) square feet of completed roofing surface there shall be used not less than sixty (60) pounds of KOPPERS Old Style Pitch and not less than forty (40) pounds nor more than fifty (50) pounds of KOPPERS Type S Asphalt.

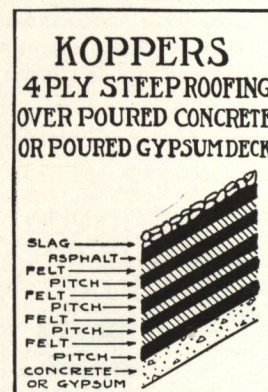
Pitch and Asphalt shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

Where the steep roof joins the flat roof the roofing on the flat surface shall be carried up the inclined surface not less than twenty-four (24) inches before the steep roofing is applied.

BOND. If a KOPPERS 10-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company, who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval, and also under the following condition:

KOPPERS Steep Bonded Roofing is to be applied in connection with KOPPERS Bonded Flat Roofing.

INSULATION. Complete information and specifications for applying insulation under KOPPERS Roofing will be sent.



KOPPERS SPECIAL STEEP 10-YEAR ROOFING SPECIFICATION No. 9

Over Poured Concrete or Poured Gypsum Deck
[For Inclines Exceeding Four (4) Inches Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS 10-Year Special Steep Type Specification No. 9, Over Poured Concrete or Poured Gypsum.

(When Bond is required, add the following sentence.) A KOPPERS 10-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be smooth, dry, firm and suitable for nailing. If the Poured Concrete or Poured Gypsum deck does not permit nailing, creosoted nailing strips shall be set flush with the deck, such strips to be spaced three (3) feet apart and placed up and down the slope of the roof.

APPLICATION. First—Apply over the deck surface a priming coat of KOPPERS Asphalt Primer which shall be allowed to dry for at least one (1) hour.

Second—Coat the entire surface of the deck with a uniform mopping of KOPPERS Type S Asphalt into which, while hot, embed one (1) ply of KOPPERS Approved Tarred Felt, lapping each sheet six (6) inches over the preceding sheet. The felt shall be laid across and not up and down the slope of the roof. The six (6) inch lap shall be thoroughly mopped with KOPPERS Type S Asphalt so that in no place shall felt touch felt. Nail each sheet two (2) inches from the lower edge with barbed roofing nails driven through flat tin discs and spaced not more than eighteen (18) inches on center.

When nailing strips are used the felt shall be nailed with three (3) nails through flat tin discs, spaced eight (8) inches apart and starting two (2) inches from the lower edge of each sheet at each nailing strip.

Third—Spread with a mop over the surface thus prepared a uniform coating of KOPPERS Type S Asphalt, into which, while hot, embed a sheet of KOPPERS Mineral Surfaced Roofing, lapping each sheet the full nineteen (19) inch selvage. Sheets of KOPPERS Mineral Surfaced Roofing shall be laid across and not up and down the slope of the roof and shall be securely fastened in place along the selvage side with a double course of one (1) inch barbed roofing nails through flat tin discs, nails in each course to be spaced twelve (12) inches apart and courses staggered. Nailing occurring nearest the longitudinal center of each sheet shall be held back from the mineral surfacing two (2) inches. When nailing strips are used the sheets shall be nailed along the selvage side with three (3) nails driven through flat tin discs, spaced five (5) inches apart at each nailing strip. All nails to be held back two (2) inches from the mineral surfacing.

Fourth—Over the full width of the selvage spread with a mop a uniform coating of KOPPERS Type S Asphalt into which, while hot, thoroughly embed the following sheet of KOPPERS Mineral Surfaced Roofing.

There shall be a six (6) inch end lap between adjoining sheets. The underlying sheet of each end lap shall be nailed with eight (8) one (1) inch barbed roofing nails through flat tin discs. Nails to be spaced four (4) inches apart starting two (2) inches from the lower edge of each sheet. Coat the underside of the six (6) inch end lap with KOPPERS Type S Asphalt and firmly embed the overlapping sheet.

All edges and end laps shall be carefully rubbed down to provide proper adhesion.

KOPPERS Mineral Surfaced Roofing shall be cut in strips not exceeding twenty (20) feet in length and shall be stacked flat for sufficient time to permit these strips to become perfectly flat before starting application.

GENERAL. All felts and mineral surfaced roofing shall be laid without wrinkles or buckles.

For each one hundred (100) square feet of completed roof-

(Continued in next column)

KOPPERS 20-YEAR ROOFING SPECIFICATION No. 10

4-Ply Over Precast Concrete Slab
[Maximum Incline One (1) Inch Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS 20-Year Type Specification No. 10, 4-Ply Over Precast Concrete.

(When Bond is required add the following sentence.) A KOPPERS 20-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be smooth, firm, dry and clean. If roof deck is inclined, it shall be properly sloped to the outlets. In such cases the incline shall not exceed one (1) inch to the foot.

APPLICATION. First—Each slab shall be spot or strip mopped with KOPPERS Old Style Pitch. The pitch moppings shall be held back four (4) inches from edge of each joint.

Second—Lay over the entire surface four (4) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet twenty-four and one-half (24½) inches over preceding sheet, mopping with KOPPERS Old Style Pitch the full twenty-four and one-half (24½) inches on each sheet, so that in no place shall felt touch felt.

KOPPERS Approved Tarred Felt shall be laid without wrinkles or buckles.

Third—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be dry and free from dirt, and from one-fourth (¼) inch to five-eighths (⅝) inch in size.

GENERAL. For each one hundred (100) square feet of completed roofing surface there shall be used not less than two hundred (200) pounds of KOPPERS Old Style Pitch. The pitch shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

BOND. If a KOPPERS 20-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company, who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

Note—The Koppers Products Company will issue Guarantee Roofing Bonds in such portions of the United States as are covered by their inspection service.

INSULATION. Complete information and specifications for applying insulation under KOPPERS Roofing sent on request.

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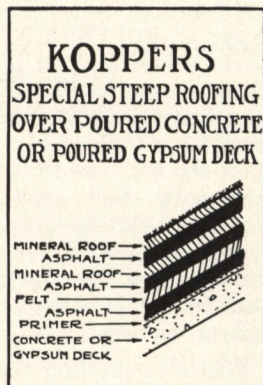
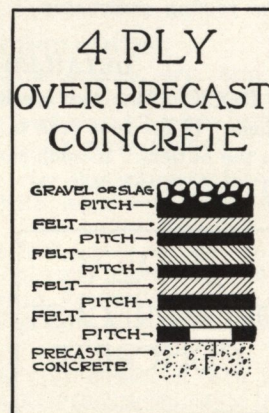
ing surface there shall be used not less than one hundred (100) pounds of KOPPERS Type S Asphalt. Asphalt shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

Where steep roof joins flat roof, the roofing in the flat surface shall be carried up the inclined surface not less than twenty-four (24) inches before steep roofing is applied.

BOND. If a KOPPERS 10-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company, who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval, and also under the following condition:

KOPPERS Special Steep Bonded Roofing is to be applied in connection with KOPPERS Bonded Flat Roofing.

INSULATION. For complete information and specifications for applying insulation under KOPPERS Roofing sent on request.



KOPPERS 15-YEAR ROOFING SPECIFICATION No. 11

3-Ply Over Precast Concrete Slab
[Maximum Incline One (1) Inch Per Foot]

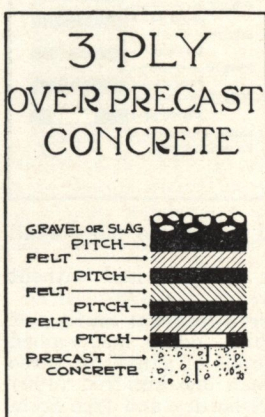
BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be a KOPPERS 20-Year Type Specification No. 11, 3-Ply Over Precast Concrete Slab.

(When Bond is required, add the following sentence.) A KOPPERS 15-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be smooth, firm, dry and clean. If the roof deck is inclined it shall be properly sloped to the outlets. In such cases the incline shall not exceed one (1) inch to the foot.



APPLICATION. First—Each slab shall be spot or strip mopped with KOPPERS Old Style Pitch, the moppings shall be held back four (4) inches from the edge of each joint.

Second—Lay over the entire surface three (3) full thicknesses of KOPPERS Approved Tarred Felt lapping each sheet, twenty-two (22) inches over the preceding sheet, mopping with KOPPERS Old Style Pitch the full twenty-two (22) inches so that in no place shall felt touch felt.

All felts shall be laid without wrinkles or buckles.

Third—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each hundred (100) square feet. The gravel or slag shall be dry and free from dirt and from one-fourth ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size.

GENERAL. For each one hundred (100) square feet of completed roofing surface there shall be used not less than one hundred and seventy-five (175) pounds of KOPPERS Old Style Pitch. Pitch shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

BOND. If a KOPPERS 15-Year Guarantee Bond is required, the roofing must be applied by a roofing contractor approved by the Koppers Products Company who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

Note—The Koppers Products Company will issue Guarantee Roofing Bonds in such portions of the United States as are covered by their inspection service.

INSULATION. Complete information and specifications for applying insulation under KOPPERS Roofing sent on request.

KOPPERS 20-YEAR ROOFING SPECIFICATION No. 12

5-Ply Over Precast Gypsum
[Maximum Incline Two (2) Inches Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS 20-Year Type Specification No. 12, 5-Ply Over Precast Gypsum.

(When Bond is required add the following sentence.) A KOPPERS 20-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

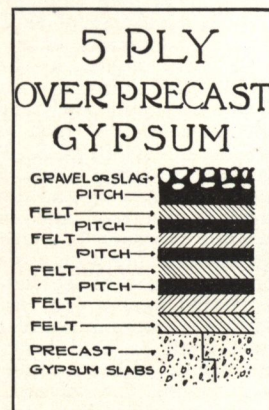
DECK. The roof deck shall be smooth, dry, firm and clean. If the roof deck is inclined, it shall be properly sloped to the outlets. All joints between the precast gypsum slabs shall be properly pointed.

APPLICATION. First—Two (2) full thicknesses of KOPPERS Approved Tarred Felt shall be laid over the entire surface, lapping each sheet seventeen (17) inches over the preceding sheet. Nail as often as may be necessary to hold the sheets in place until the remaining felt is laid.

Second—Apply a uniform coating of KOPPERS Old Style Pitch.

Third—Lay over the entire surface three (3) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet twenty-two (22) inches over the preceding sheet, and mopping with KOPPERS Old Style Pitch the full width of the twenty-two (22) inch lap, so that in no place shall felt touch felt. Nail six (6) inches from the upper edge of each sheet and not more than two (2) feet apart. Nails shall not exceed seven-eighths ($\frac{7}{8}$) inch in length and shall be driven through flat tin discs which shall be not less than one (1) inch in diameter.

Fourth—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be dry and free from dirt and from one-fourth ($\frac{1}{4}$) to five-eighths ($\frac{5}{8}$) inch in size.



GENERAL. All tarred felts shall be laid without wrinkles or buckles. For each one hundred (100) square feet of completed roofing surface there shall be used not less than one hundred and fifty (150) pounds of KOPPERS Old Style Pitch. Pitch shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

BOND. If a KOPPERS 20-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company, who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

INSULATION. Complete specifications for applying insulation under KOPPERS Roofing sent on request.

KOPPERS 15-YEAR ROOFING SPECIFICATION No. 13

4-Ply Over Precast Gypsum
[Maximum Incline Two (2) Inches Per Foot]

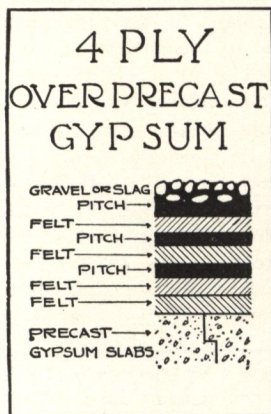
BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS 15-Year Type Specification No. 13, 4-Ply Over Precast Gypsum.

(When Bond is required add the following sentence.) A KOPPERS 15-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be smooth, dry, firm and clean. If the roof deck is inclined it shall be properly sloped to the outlets. All joints between the precast gypsum slabs shall be properly pointed.



APPLICATION. First—Two (2) full thicknesses of KOPPERS Approved Tarred Felt shall be laid over the entire surface, lapping each sheet seventeen (17) inches over the preceding sheet and nailing as often as may be necessary to hold the sheets until the remaining felt is laid.

Second—Apply a uniform coating of KOPPERS Old Style Pitch.

Third—Lay over the entire surface two (2) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet seventeen (17) inches over the preceding sheet and mopping with KOPPERS Old Style Pitch the full width of the seventeen (17) inch lap so that in no place shall felt touch felt. Nail six (6) inches from the upper edge of sheet and not more than two (2) feet apart. Nails shall not exceed seven-eighths ($\frac{7}{8}$) inch in length and shall be driven through flat tin discs which shall not be less than one (1) inch in diameter.

Fourth—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be dry and free from dirt and from one-fourth ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size.

GENERAL. All tarred felt shall be laid without wrinkles or buckles. For each one hundred (100) square feet of completed roofing surface there shall be used not less than one hundred and twenty-five (125) pounds of KOPPERS Old Style Pitch. Pitch shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

BOND. If a KOPPERS 15-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

INSULATION. Complete specifications for applying insulation under KOPPERS Roofing sent on request.

KOPPERS STEEP 10-YEAR ROOFING SPECIFICATION No. 14

5-Ply Over Precast Gypsum
[Maximum Incline Four (4) Inches Per Foot and Not Less Than Two (2) Inches Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS 10-Year Steep Type Specification No. 14, 5-Ply Over Precast Gypsum.

(When Bond is required add the following sentence.) A KOPPERS 10-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be smooth, dry, firm and clean. Its incline shall not exceed four (4) inches per foot, nor be less than two (2) inches per foot. All joints between the precast gypsum slabs shall be properly pointed.

APPLICATION. First—Lay over the entire surface five (5) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet twenty-six (26) inches over the preceding sheet. The felt shall be laid across and not up and down the slope of the roof. Nail each sheet with one (1) inch barbed roofing nails through flat tin discs ten (10) inches from the upper edge. The nails shall be spaced not more than one (1) foot apart.

Second—A width of eighteen (18) inches of each sheet shall be mopped uniformly with KOPPERS Old Style Pitch. This mopping shall be held back two (2) inches from the lower edge and shall extend back twenty (20) inches from the lower edge. The finished felt surface shall be smooth and free from pitch drippings.

Third—Spread with a mop a uniform coating of KOPPERS Type S Asphalt over the entire surface into which, while hot, embed not less than two hundred and fifty (250) pounds of slag which shall be from one-fourth ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size. The slag shall be dry and free from dirt. If the slag is damp or if the weather is cold the slag shall be heated, and shall be applied warm. The finished surface shall be broomed clean of all loose slag.

GENERAL. All tarred felt shall be laid without wrinkles or buckles.

There shall be not less than sixty (60) pounds of KOPPERS Old Style Pitch and not less than forty (40) pounds nor more than fifty (50) pounds of KOPPERS Type S Asphalt used for each one hundred (100) square feet of completed roofing surface. The pitch and asphalt shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

Where the steep roof joins the flat roof the roofing on the flat surface shall be carried up the inclined surface not less than twenty-four (24) inches before the steep roofing is applied.

BOND. If a KOPPERS 10-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval, and also under the following condition:

KOPPERS Steep Bonded Roofing is to be applied in connection with KOPPERS Bonded Flat Roofing.

INSULATION. Complete specifications for applying insulation under KOPPERS Roofing sent on request.



KOPPERS 20-YEAR ROOFING SPECIFICATION No. 15

4-Ply Over Book Tile

[Maximum Incline One (1) Inch Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be a KOPPERS 20-Year Type Specification No. 15, 4-Ply Over Book Tile.

(When Bond is required add the following sentence.) A KOPPERS 20-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The book tile shall be surfaced with not less than one-half ($\frac{1}{2}$) inch of Portland Cement Mortar. The roof deck shall be smooth, firm, dry and clean. If the roof deck is inclined it shall be properly sloped to the outlets.

APPLICATION. First—Apply a uniform coating of KOPPERS Old Style Pitch to the roof deck.

Second—Lay over the entire surface four (4) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet twenty-four and one-half ($24\frac{1}{2}$) inches over the preceding sheet, mopping with KOPPERS Old Style Pitch the full twenty-four and one-half ($24\frac{1}{2}$) inches on each sheet so that in no place shall felt touch felt.

Third—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be dry and free from dirt, and from one-fourth ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size.

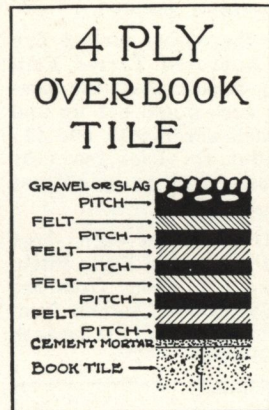
GENERAL. All tarred felt shall be laid without wrinkles or buckles.

For each one hundred (100) square feet of completed roofing surface there shall be used not less than two hundred (200) pounds of KOPPERS Old Style Pitch. Pitch should not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

BOND. If a KOPPERS 20-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

Note—The Koppers Products Company will issue Guarantee Roofing Bonds in such portions of the United States as are covered by their inspection service.

INSULATION. Complete information and specifications for applying insulation under KOPPERS Roofing sent on request.



KOPPERS 15-YEAR ROOFING SPECIFICATION No. 16

3-Ply Over Book Tile

[Maximum Incline One (1) Inch Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS 15-Year Type Specification No. 16, 3-Ply Over Book Tile.

(When Bond is required add the following sentence.) A KOPPERS 15-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The book tile shall be surfaced with not less than one-half ($\frac{1}{2}$) inch of Portland Cement Mortar. The roof deck shall be smooth, firm, dry and clean. If the roof deck is inclined it shall be properly sloped to the outlets.

APPLICATION. First—Apply a uniform coating of KOPPERS Old Style Pitch to the roof deck.

Second—Lay over the entire surface three (3) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet twenty-two (22) inches over the preceding sheet, mopping with KOPPERS Old Style Pitch the full twenty-two (22) inches on each sheet so that in no place shall felt touch felt.

Third—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be dry and free from dirt and from one-fourth ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size.

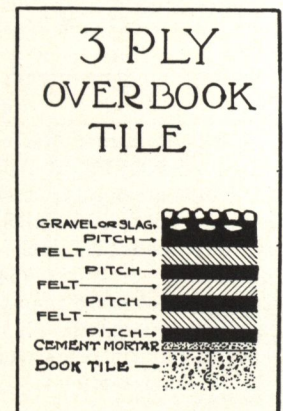
GENERAL. All tarred felt shall be laid without wrinkles or buckles.

For each one hundred (100) square feet of completed roofing surface there shall be used not less than one hundred and seventy-five (175) pounds of KOPPERS Old Style Pitch. Pitch should not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

BOND. If a KOPPERS Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

Note—The Koppers Products Company will issue Guarantee Roofing Bonds in such portions of the United States as are covered by their inspection service.

INSULATION. Complete information and specifications for applying insulation under KOPPERS Roofing sent on request.



KOPPERS PROMENADE TILE ROOFING SPECIFICATION No. 20

5-Ply Over Poured Concrete Under Promenade Tile
[Maximum Incline One (1) Inch Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS Promenade Tile, Roofing Specification No. 20, 5-Ply Over Poured Concrete.

If Bond is required refer to paragraph under BOND.

DETAILED SPECIFICATIONS

DECK. The deck shall be concrete and shall be smooth, dry, firm, clean and properly sloped to the outlets.

APPLICATION. First—Apply a uniform coating of KOPPERS Old Style Pitch.

Second—Lay over the entire surface two (2) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet seventeen (17) inches over the preceding sheet, mopping with KOPPERS Old Style Pitch the full seventeen (17) inches on each sheet so that in no place shall felt touch felt.

Third—Apply a uniform coating of KOPPERS Old Style Pitch.

Fourth—Lay over the entire surface two (2) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet seventeen (17) inches over the preceding sheet, mopping with KOPPERS Old Style Pitch the full seventeen (17) inches on each sheet so that in no place shall felt touch felt.

Fifth—Before laying the tile, the surface of the roofing shall be thoroughly cleaned and the roofing mopped with KOPPERS Old Style Pitch into which, while hot, embed one (1) layer of KOPPERS Approved Tarred Felt lapping each sheet two (2) inches over the preceding sheet. Over this surfacing and immediately preceding the laying of the tile spread a heavy uniform coating of KOPPERS Old Style Pitch. Only part of the roof surface shall be covered with the last ply of felt and mopping of pitch at a time, the tile then being laid over that portion at once.

Sixth—The vitrified clay tile shall be set in not less than three-fourths ($\frac{3}{4}$) inch of Portland Cement Mortar (1 to 3 mix). The joints shall be grouted full with Portland Cement Mortar (1 to 2 mix). The tile shall be laid to show three-sixteenths ($\frac{3}{16}$) inch to one-fourth ($\frac{1}{4}$) inch joints. Expansion joints three-fourths ($\frac{3}{4}$) inch wide filled with plastic mixture, which must be approved by the architect, shall be provided between the tile and all flashings. Either metal or mastic expansion joints shall be provided throughout the roof surface as may be necessary to take care of expansion. All expansion joints shall extend from the top of the tile through the cement mortar to the felt and pitch waterproofing. Expansion joints shall be spaced not more than twenty (20) feet apart in any direction. Expansion joints shall also be installed at all walls, skylights, curbs, etc.

GENERAL. All tarred felts shall be laid without wrinkles or buckles. For each one hundred (100) square feet of completed roofing surface there should be used not less than two hundred (200) pounds of KOPPERS Old Style Pitch. Pitch should not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

All end laps between sections of tarred felt shall be staggered at least six (6) inches.

Notice—The Koppers Products Company will not be responsible or liable for leaks due to the installation, contraction or expansion of Promenade Tile and will not be responsible for the taking up and replacing of tile in order to locate leaks through the roofing.

BOND. If a KOPPERS Guarantee Bond is required, this must be taken up with our nearest District Office or representative.

INSULATION. Complete information and specifications for applying insulation under KOPPERS Roofing sent on request.

KOPPERS 10-YEAR SPRAY POND ROOFING SPECIFICATION No. 21

5-Ply Over Poured Concrete Deck
[Maximum Incline One (1) Inch Per Foot]

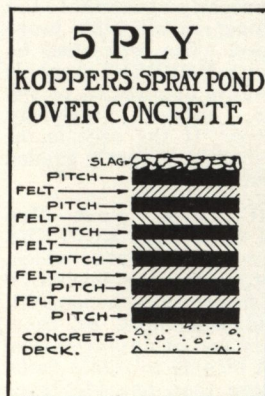
BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS Spray Pond 10-Year Type Specification No. 21, 5-Ply Over Poured Concrete.

(When Bond is required add the following sentence.) A KOPPERS 10-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The roof deck shall be clean, smooth and free from all loose material.



APPLICATION. First—Apply a uniform coating of KOPPERS Old Style Pitch to the roof deck.

Second—Lay over the entire surface two (2) plies of KOPPERS Approved Tarred Felt, lapping each sheet seventeen (17) inches over the preceding sheet, mopping with KOPPERS Old Style Pitch the full width of each lap so that in no place shall felt touch felt.

Third—Apply a uniform coating of KOPPERS Old Style Pitch over the entire surface.

Fourth—Lay over the entire surface two (2) plies of KOPPERS Approved Tarred Felt, lapping each sheet seventeen (17) inches over the preceding sheet mopping with KOPPERS Old Style Pitch the full width of each lap so that in no place shall felt touch felt.

Fifth—Apply a uniform coating of KOPPERS Old Style Pitch over the entire surface.

Sixth—Immediately preceding the slagging in of the roof thoroughly clean the surface of the roofing and spread with a mop, a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed one (1) layer of KOPPERS Approved Tarred Felt, lapping each sheet two (2) inches over the preceding sheet.

Seventh—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than three hundred (300) pounds slag for each one hundred (100) square feet. The slag shall be dry and free from dirt and from one-fourth ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size.

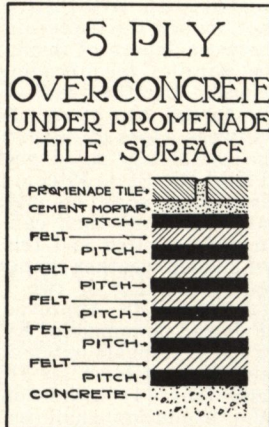
Eighth—All loose slag shall be swept from the roof and a second uniform coating of KOPPERS Old Style Pitch poured over the slag into which, while hot, the remainder of the slag shall be embedded.

GENERAL. All tarred felt shall be applied without wrinkles or buckles. There shall be used not less than two hundred and seventy-five (275) pounds of KOPPERS Old Style Pitch for each one hundred (100) square feet of completed roof surface. Pitch shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

At points where water pressure from the spray is excessive the roof surface shall be protected with creosoted board platforms or other suitable construction to break the force of the water. These platforms shall be laid on top of the roof surface and not fastened to the deck.

BOND. If a KOPPERS 10-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

INSULATION. Complete specifications for applying insulation under KOPPERS Roofing sent on request.



KOPPERS 20-YEAR ROOFING SPECIFICATION No. 17

4-Ply Over Steel Deck With Insulation [Maximum Incline One (1) Inch Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS 20-Year Type Specification No. 17, 4-Ply Over Steel Deck with Insulation.

(When Bond is required add the following sentence.) A KOPPERS 20-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The Steel Deck shall be clean, smooth and dry, and shall be properly anchored to the steel purlins, and all joints properly lapped. The deck shall be primed with KOPPERS Asphalt Primer before application of the insulation, unless previously shop-coated. If the deck is inclined it shall be properly graded to the outlets.

APPLICATION. First—Mop the steel deck with KOPPERS Type S Asphalt into which, while hot, embed the insulation pressing firmly into the asphalt. The insulation must be thoroughly dry and of approved type and must be able to retain nails. When more than one (1) layer of insulation is used the top

surface of each layer shall be coated with KOPPERS Old Style Pitch into which, while hot, embed the succeeding layer. All joints shall be broken between the layers of insulation. All layers of insulation shall be parallel to preceding layers. Edges shall be brought closely together and shall not be forced into place. All space between edges of insulation shall be completely filled with KOPPERS Old Style Pitch. No more insulation shall be installed at any one time than can be protected by pitch and felt in case of sudden weather changes. Cut-offs consisting of two (2) plies of KOPPERS Approved Tarred Felt and moppings of KOPPERS Type S Asphalt extending on to the deck at least six (6) inches and four (4) inches on top of the insulation shall be applied at the end of each day's work over exposed edges of insulation.

All edges of insulation adjoining parapet walls, cants, eaves, vertical surfaces, etc., shall be sealed by applying two (2) plies of KOPPERS Approved Tarred Felt and moppings of Asphalt.

Second—Apply a uniform coating of KOPPERS Old Style Pitch over the insulation.

Third—Lay over the entire surface four (4) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet twenty-four and one-half (24½) inches over the preceding sheet, mopping with KOPPERS Old Style Pitch the full twenty-four and one-half (24½) inches on each sheet so that in no place shall felt touch felt. All tarred felts shall be laid without wrinkles or buckles.

Fourth—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel, or three hundred (300) pounds of slag, for each one hundred (100) square feet. The gravel or slag shall be dry and free from dirt, and from one-fourth (¼) inch to five-eighths (⅝) inch in size.

GENERAL. For each one hundred (100) square feet of completed roofing there shall be used not less than two hundred (200) pounds of KOPPERS Old Style Pitch and not less than thirty-five (35) pounds of KOPPERS Old Style Pitch for moppings between each layer of insulation. Approximately thirty-five (35) pounds of KOPPERS Type S Asphalt shall be required for the deck mopping. Pitch and Asphalt shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.



Koppers Products Company will not be responsible for any damage to or below the built-up roofing caused by or as the result of the use of insulation.

BOND. If a KOPPERS 20-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company, who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

INSULATION. Complete specifications on insulation under KOPPERS Roofing sent on request.

KOPPERS 15-YEAR ROOFING SPECIFICATION No. 18

3-Ply Over Steel Deck With Insulation [Maximum Incline One (1) Inch Per Foot]

BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS 15-Year Type Specification No. 18, 3-Ply Over Steel Deck with Insulation.

(When Bond is required add the following sentence.) A KOPPERS 15-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The Steel Deck shall be clean, smooth and dry, and shall be properly anchored to the steel purlins, and all joints properly lapped. The deck shall be primed with KOPPERS Asphalt Primer before application of the insulation, unless previously shop-coated. If the deck is inclined it shall be properly graded to the outlets.

APPLICATION. First—Mop the steel deck with KOPPERS Type S Asphalt into which, while hot, embed the insulation, pressing firmly into the asphalt. The insulation must be thoroughly dry and of approved type and must be able to retain nails. When more than one (1) layer of insulation is used the top surface of each layer shall be coated with KOPPERS Old Style Pitch into which, while hot, embed the succeeding layer. All joints shall be broken between layers of insulation. All layers of insulation shall be parallel to preceding layers. Edges shall be brought closely together and shall not be forced into place. All space between edges of insulation shall be completely filled with KOPPERS Old Style Pitch. No more insulation shall be installed at any one time than can be protected by pitch and felt in case of sudden weather changes. Cut-offs consisting of two (2) plies of KOPPERS Approved Tarred Felt and moppings of KOPPERS Type S Asphalt extending on to the deck at least six (6) inches and four (4) inches on top of the insulation shall be applied at the end of each day's work over exposed edges of insulation.

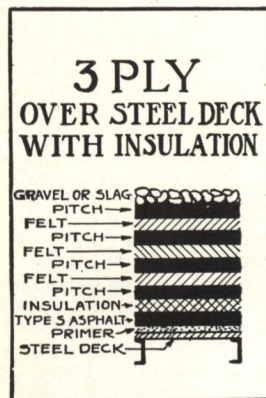
All edges of insulation adjoining parapet walls, cants, eaves, vertical surfaces, etc., shall be sealed by applying two (2) plies of KOPPERS Approved Tarred Felt and moppings of Asphalt.

Second—Apply a uniform coating of KOPPERS Old Style Pitch over the insulation.

Third—Lay over the entire surface three (3) full thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet twenty-two (22) inches over the preceding sheet, mopping with KOPPERS Old Style Pitch the full twenty-two (22) inches on each sheet so that in no place shall felt touch felt. All tarred felts shall be laid without wrinkles or buckles.

Fourth—Pour over the entire surface a uniform coating of KOPPERS Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be dry and free from

(Continued on page 13)



dirt, and from one-fourth ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size.

GENERAL. For each one hundred (100) square feet of completed roofing there shall be used not less than one hundred and seventy-five (175) pounds of KOPPERS Old Style Pitch and not less than thirty-five (35) pounds of KOPPERS Old Style Pitch for moppings between each layer of insulation. Approximately thirty-five (35) pounds of KOPPERS Type S Asphalt will be required for deck mopping. Pitch and asphalt shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

Koppers Products Company will not be responsible for any damage to or below the built-up roofing caused by or as the result of the use of insulation.

BOND. If a KOPPERS 15-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company, who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.

INSULATION. Complete specifications on insulation under KOPPERS Roofing sent on request.

KOPPERS STEEP 10-YEAR ROOFING SPECIFICATION No. 19

4-Ply Over Steel Deck With Insulation

[Maximum Incline Four (4) Inches Per Foot and Not Less Than One (1) Inch Per Foot]

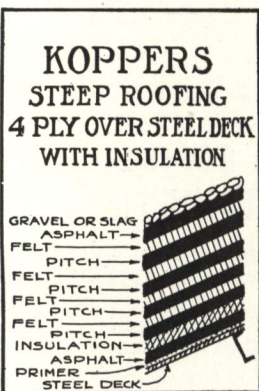
BRIEF SPECIFICATION (For Architects and Engineers)

The roofing shall be KOPPERS 10-Year Type Specification No. 19, 4-Ply Over Steel Deck with Insulation.

(When Bond is required add the following sentence.) A KOPPERS 10-Year Guarantee Bond shall be furnished by the roofing contractor.

DETAILED SPECIFICATIONS

DECK. The Steel Deck shall be clean, smooth and dry, and shall be properly anchored to the steel purlins, and all joints properly lapped. The deck shall be primed with KOPPERS Asphalt Primer before application of the insulation, unless previously shop-coated. The deck shall be properly graded to the outlets.



APPLICATION. First — Mop the steel deck with KOPPERS Type S Asphalt into which, while hot, embed the insulation pressing firmly into the asphalt. The insulation must be thoroughly dry and of approved type and must be able to retain nails. Insulation shall be securely fastened to the deck by means of approved screws, expanding nails or cleats which shall be placed at each corner and in the center of each sheet of insulation. When more than one (1) layer of insulation is applied fasteners shall be driven after the top layer has been applied. The top

surface of each layer of insulation shall be coated with KOPPERS Old Style Pitch into which embed the succeeding layer. All joints shall be broken between layers of insulation. All layers of insulation shall be parallel to succeeding layers. Edges shall be brought closely together and shall not be forced into place. All space between edges of insulation shall be completely filled with KOPPERS Old Style Pitch.

No more insulation shall be installed at any one time than can be protected by pitch and felt in case of sudden weather changes.

Cutoffs consisting of two (2) plies of KOPPERS Approved Tarred Felt and moppings of KOPPERS Type S Asphalt extending on to the deck at least six (6) inches and four (4) inches on top of the insulation shall be applied at the end of each day's work over exposed edges of insulation.

All edges of insulation adjoining parapet walls, cants, eaves, vertical surfaces, etc., shall be sealed by applying two (2) plies of KOPPERS Approved Tarred Felt and moppings of Asphalt.

Second—The surface of the insulation shall be strip mopped with KOPPERS Old Style Pitch. The strip mopping shall be approximately fifteen (15) inches wide and shall run up and down the slope. Strip moppings shall be spaced not more than forty-five (45) inches apart from center to center.

Third—Lay over the entire surface four (4) thicknesses of KOPPERS Approved Tarred Felt, lapping each sheet twenty-four and one-half ($24\frac{1}{2}$) inches over the preceding sheet. The Approved Tarred Felt shall be laid across the slope of the roof. Nail each sheet with nails of sufficient length to completely penetrate the insulation but which will not puncture the steel deck. Nails to be placed ten (10) inches from the upper edge of each ply of felt and to be spaced not more than one (1) foot apart.

Fourth—A width of eighteen (18) inches on each sheet shall be mopped uniformly with KOPPERS Old Style Pitch. This mopping shall be held back two (2) inches from the lower edge of each sheet and shall extend back twenty (20) inches from the lower edge. The finished felt surface shall be smooth and free of pitch drippings.

Fifth—Spread with a mop a uniform coating of KOPPERS Type S Asphalt over the entire surface into which, while hot, embed not less than two hundred and fifty (250) pounds of slag per one hundred (100) square feet. The slag shall be dry and free from dirt, and from one-fourth ($\frac{1}{4}$) inch to five-eighths ($\frac{5}{8}$) inch in size.

When roofing is applied in damp or cold weather the slag must be heated and applied warm on the roof.

The finished surface shall be broomed clean of all loose slag.

GENERAL. All tarred felt shall be laid without wrinkles or buckles.

For each one hundred (100) square feet of completed roofing there shall be used not less than sixty (60) pounds of KOPPERS Old Style Pitch, and not less than thirty-five (35) pounds of KOPPERS Old Style Pitch for moppings between each layer of insulation. Approximately thirty-five (35) pounds of KOPPERS Type S Asphalt will be required for deck moppings and not less than forty (40) pounds nor more than fifty (50) pounds for top mopping into which the slag is embedded.

Pitch and Asphalt shall not be heated above three hundred and seventy-five (375) degrees Fahrenheit.

Where the steep roof joins the flat roof the roofing on the flat surface shall be carried up the inclined surface not less than twenty-four (24) inches before the steep roofing is applied.

Koppers Products Company will not be responsible for any damage to or below the built-up roofing caused by or as the result of the use of insulation.

BOND. If a KOPPERS 10-Year Guarantee Bond is required the roofing must be applied by a roofing contractor approved by the Koppers Products Company who shall apply the roofing in strict accordance with the specifications and requirements of the Koppers Products Company and subject to their inspection and approval and under the following condition:

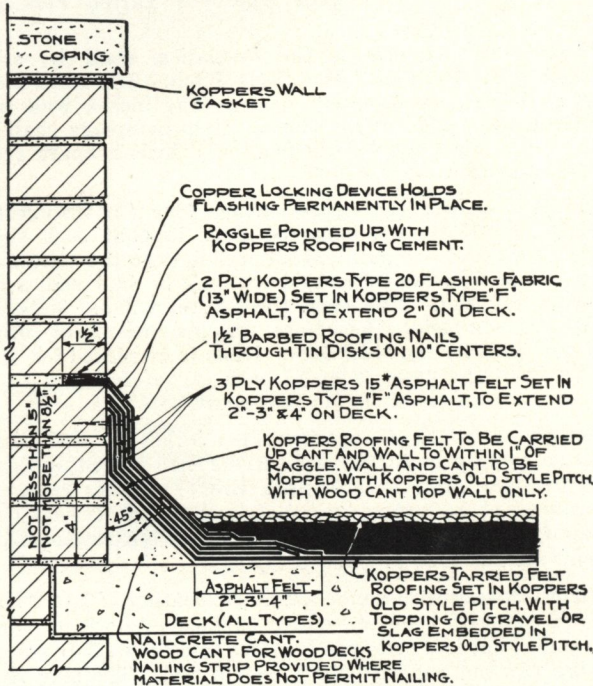
KOPPERS Steep Bonded Roofing is to be applied in connection with KOPPERS Bonded Flat Roofing.

INSULATION. Complete specifications on insulation under KOPPERS Roofing sent on request.

KOPPERS FLASHING

GENERAL. All Flashing Fabric and Asphalt Felt shall be free from wrinkles and buckles.

BOND. If a Koppers 10, 15 or 20-Year Guarantee Flashing Bond is required the flashing must be installed in connection with a Koppers Bonded Roof, the Flashing Bond being for no greater period than the Roofing Bond. Flashing and Roofing shall be installed by a roofing contractor approved by the Koppers Products Company who shall apply Roofing and Flashing in strict accordance with the specifications and requirements of the Koppers Products Company, and subject to their inspection and approval.



Koppers 20-Year Bonded Flashing Specification No. 104

KOPPERS 20-YEAR BONDED FLASHING SPECIFICATION No. 104

BRIEF SPECIFICATION (For Architects and Engineers)
The Flashing shall be KOPPERS 20-Year Type, Specification No. 104.

DETAILED SPECIFICATIONS

APPLICATION. Extend all roofing plies of felt and mopings of pitch up the wall to within one (1) inch of the raggle.

Apply a uniform coating of KOPPERS Type F Asphalt over the roofing extending from the raggle to not less than two (2) inches on to the roof deck. Into the Type F Asphalt embed one (1) ply of KOPPERS 15-Lb. Asphalt Felt, extending from the raggle not less than two (2) inches on to the roof deck. On top of this Flashing strip apply another uniform coating of KOPPERS Type F Asphalt and another Flashing strip, this application being repeated until a three (3) ply reinforcement has been completed. Each strip shall extend on to the deck roofing one (1) inch beyond preceding strip. Felt reinforcement Flashing strips shall not exceed ten (10) feet three (3) inches in length, and there shall be a three (3) inch end lap between adjoining strips.

A uniform coating of KOPPERS Type F Asphalt shall be applied between end laps.

Each Flashing reinforcement strip shall be set in separately and joints must be broken with the underlying Flashing reinforcement strip.

The top ply of Flashing reinforcement shall be nailed in the middle of the cant and half-way between the top of the cant and raggle every ten (10) inches with one and one-half (1 1/2) inch barbed roofing nails through flat tin discs.

Over the entire reinforcement strip and into the full depth of the raggle apply a uniform coating of KOPPERS Type F Asphalt. Insert and fasten the upper part of KOPPERS 20-Year Type Flashing Fabric securely into the raggle by means of the copper locking device riveted to the flashing and press the flashing fabric into the coating of

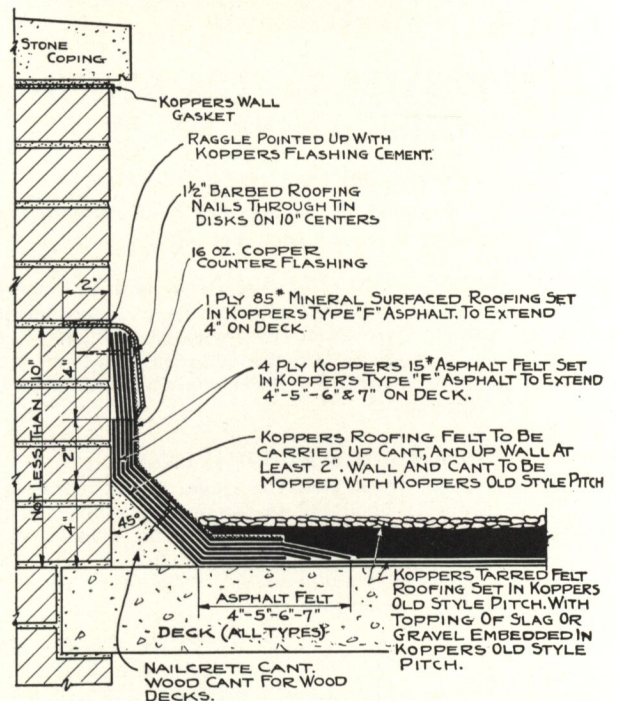
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KOPPERS Type F Asphalt on the reinforcement plies. Apply a uniform coating of KOPPERS Type F Asphalt between the first and second plies of KOPPERS Flashing Fabric, pressing the top ply securely into the Type F Asphalt. All fabric Flashing strips are ten (10) feet three (3) inches long, and each strip shall overlap the preceding strip three (3) inches.

A uniform coating of KOPPERS Type F Flashing shall be applied between end laps.

Fill the raggle completely with KOPPERS Roof Cement.

GENERAL. Flashing Fabric shall be installed immediately so as to prevent seepage of water behind reinforcement strips.



Koppers 20-Year Bonded Flashing Specification No. 107

KOPPERS 20-YEAR BONDED FLASHING SPECIFICATION No. 107

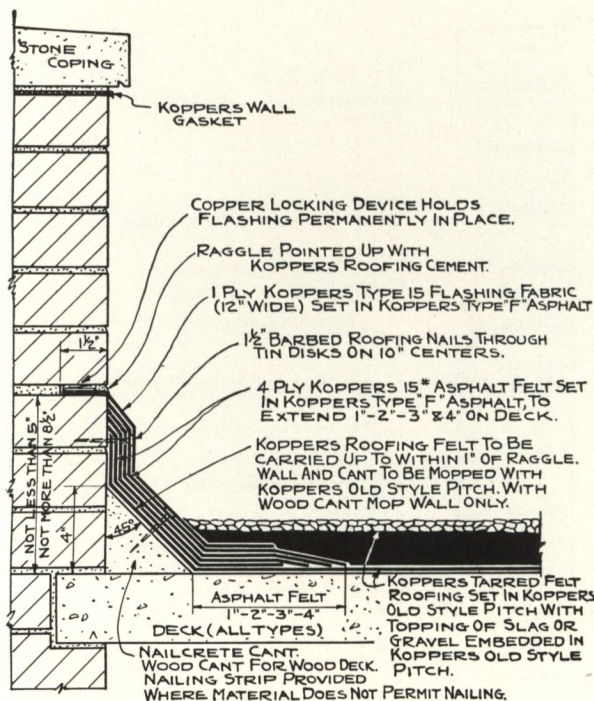
BRIEF SPECIFICATION (For Architects and Engineers)
The flashing shall be installed according to KOPPERS Flashing Specification No. 107.

DETAILED SPECIFICATIONS

APPLICATION. Application shall be the same as flashing specification No. 106 except that four (4) plies of 15-Lb. Asphalt Felt shall be installed as reinforcing plies.

METAL CAP FLASHING FOR SPECIFICATIONS Nos. 101, 106 AND 107. Metal cap flashing shall be installed immediately so as to prevent seepage of water behind the base flashing. We recommend that 14 oz. cold rolled copper be used for 15 and 20-year flashing specifications.

Metal cap flashing shall extend into the raggle not less than two (2) inches and shall have a four (4) inch exposed apron extending down over the base flashing. After the metal cap flashing has been installed completely fill the raggle groove with KOPPERS Roof Cement.



Koppers 15-Year Bonded Flashing Specification No. 105

KOPPERS 15-YEAR BONDED FLASHING SPECIFICATION No. 105

BRIEF SPECIFICATION (For Architects and Engineers)

The Flashing shall be KOPPERS 15-Year Type Specification No. 105.

DETAILED SPECIFICATIONS

APPLICATION. Extend all roofing plies of felt and mopings of pitch up the wall to within one (1) inch of the raggle.

Apply a uniform coating of KOPPERS Type F Asphalt over the roofing extending from the raggle to not less than two (2) inches on to the roof deck. Into the Type F Asphalt embed one (1) ply of KOPPERS 15-Lb. Asphalt Felt, extending from the raggle to not less than two (2) inches on to the roof deck. On top of this Flashing Strip apply another uniform coating of KOPPERS Type F Asphalt and other Flashing Strip, this application being repeated until a four (4) ply reinforcement has been completed. Each strip shall extend on to the deck roofing one (1) inch beyond preceding strip. Felt reinforcement Flashing Strips shall not exceed ten (10) feet three (3) inches in length, and there shall be a three (3) inch end lap between adjoining strips.

A uniform coating of KOPPERS Type F Asphalt shall be applied between end laps.

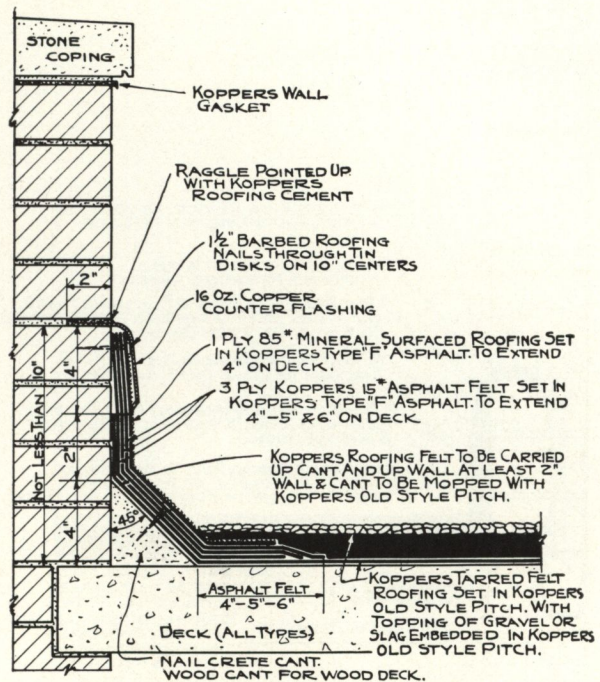
Each Flashing reinforcement strip shall be set in separately and joints must be broken with the underlying Flashing reinforcement strip.

The top ply of Flashing reinforcement shall be nailed in the middle of the cant and half-way between the top of the cant and raggle every ten (10) inches with one and one-half (1 1/2) inch barbed roofing nails through flat tin discs.

Over the entire reinforcement strip and into the full depth of the raggle apply a uniform coating of KOPPERS Type F Asphalt. Insert and fasten the upper part of KOPPERS 15-Year Flashing Fabric securely into the raggle by means of the copper locking device riveted to the flashing and press the flashing fabric into the coating of KOPPERS Type F Asphalt on the reinforcement plies. All Fabric Flashing strips are ten (10) feet three (3) inches long and each strip shall overlap the preceding strip three inches. A uniform coating of KOPPERS Type F Asphalt shall be applied between end laps.

Fill the raggle completely with KOPPERS Roof Cement.

GENERAL. (Specifications Nos. 103, 104 and 105). Flashing Fabric shall be installed immediately so as to prevent seepage of water behind reinforcement strips.



Koppers 15-Year Bonded Flashing Specification No. 106

KOPPERS 15-YEAR BONDED FLASHING SPECIFICATION No. 106

BRIEF SPECIFICATION (For Architects and Engineers)

The flashing shall be installed according to KOPPERS Flashing Specification No. 106.

DETAILED SPECIFICATIONS

APPLICATION. Extend all plies of roofing felt and mopings of pitch up the wall to within 1 inch of the raggle.

Apply a uniform coating of KOPPERS Type F Asphalt over the roofing extending from the raggle to not less than two (2) inches on to the roof deck. Into the Type F Asphalt embed one (1) ply of KOPPERS 15-Lb. Asphalt Felt extending from the raggle to not less than two (2) inches on to the roof deck. On top of this flashing strip apply another uniform coating of KOPPERS Type F Asphalt and another flashing strip. Repeat this application until a three-ply reinforcement has been completed. Each flashing strip shall extend on to the deck roofing one (1) inch beyond the preceding strip.

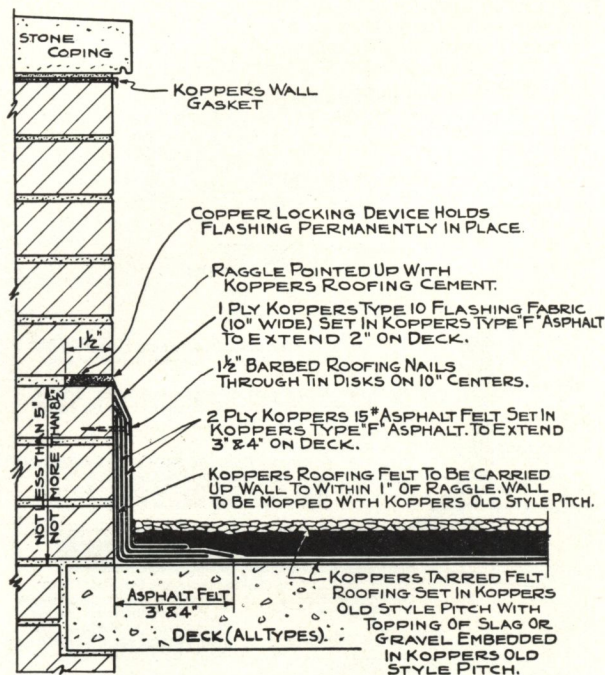
The top ply of flashing reinforcement shall be nailed in the middle of the cant every ten (10) inches with one and one-half (1 1/2) inch barbed roofing nails through flat tin discs.

Coat the entire surface of the asphalt felt flashing reinforcement strip uniformly with KOPPERS Type F Asphalt and embed immediately one (1) layer of eighty-five (85) pound mineral surfaced roofing cut so as to extend from the raggle to the deck angle. Reinforcing felt and mineral surfaced roofing shall be securely fastened at the top with one and one-half inch barbed roofing nails through flat tin discs to prevent slipping, nails to be spaced every ten (10) inches in the vertical mortar joints or nail strips.

All end joints of felt reinforcement strips shall break joints with underlying strip.

All felt reinforcement and mineral surface roofing strips shall not exceed ten (10) feet three (3) inches in length and there shall be a three (3) inch end lap between adjoining strips.

METAL CAP FLASHING. Refer to details explained following Specification No. 107.



Koppers 10-Year Bonded Flashing Specification No. 103

KOPPERS 10-YEAR BONDED FLASHING SPECIFICATION No. 103

BRIEF SPECIFICATION (For Architects and Engineers)

The Flashing shall be KOPPERS 10-Year Type, Specification No. 103.

DETAILED SPECIFICATIONS

APPLICATION. Extend all roofing plies of felt and moppings of Pitch to within one (1) inch of the raggle.

Apply a uniform coating of KOPPERS Type F Asphalt over the roofing extending from the raggle to not less than two (2) inches on to the roof deck. Into the Type F Asphalt embed one (1) ply of KOPPERS 15-Lb. Asphalt Felt extending from the raggle to not less than two (2) inches on to the roof deck. On top of this Flashing Strip apply another uniform coating of KOPPERS Type F Asphalt and another Flashing Strip, this application being the same as the first application strip. Each strip shall extend on to the deck roofing one (1) inch beyond the preceding strip. Felt reinforcement Flashing Strips shall not exceed ten (10) feet three (3) inches in length and there shall be a three (3) inch end lap between adjoining strips.

A uniform coating of KOPPERS Type F Asphalt shall be applied between end laps.

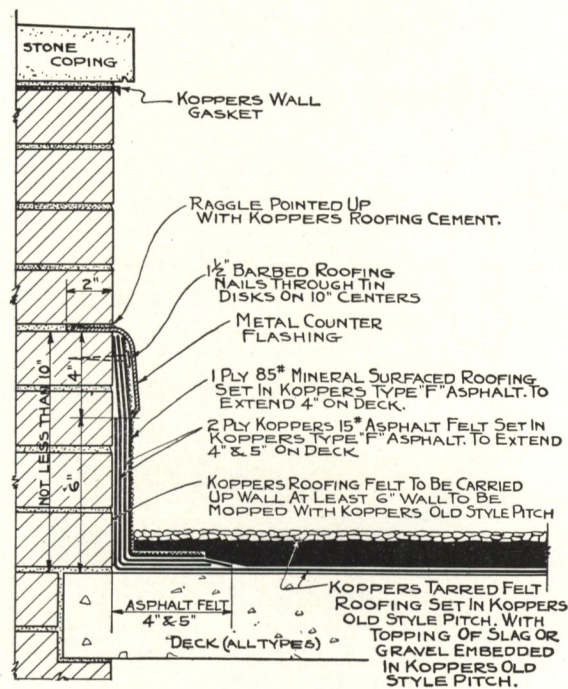
Each flashing reinforcement strip shall be set in separately and joints must be broken with the underlying Flashing reinforcement strip.

Nail through top of felt reinforcement strips and roofing felts every ten (10) inches in horizontal or vertical mortar joints with one and one-half (1½) inch barbed roofing nails through flat tin discs.

Over the entire reinforcement strip and into the full depth of the raggle apply a uniform coating of KOPPERS Type F Asphalt. Insert and fasten the upper part of KOPPERS Type 10 Flashing Fabric securely into the raggle by means of the copper locking device riveted to the Flashing and press the flashing fabric into the coating of KOPPERS Type F Asphalt on the reinforcement plies. All fabric flashing strips are ten (10) feet three (3) inches long and each strip shall overlap the preceding strip three (3) inches. A uniform coating of KOPPERS Type F Asphalt shall be applied between end laps.

Fill the raggle completely with KOPPERS Roof Cement.

GENERAL. Flashing Fabric shall be installed immediately so as to prevent seepage of water behind reinforcement strips.



Koppers 10-Year Bonded Flashing Specification No. 101

KOPPERS 10-YEAR BONDED FLASHING SPECIFICATION No. 101

BRIEF SPECIFICATION (For Architects and Engineers)

The flashing shall be installed according to KOPPERS Flashing Specification No. 101.

DETAILED SPECIFICATIONS

APPLICATION. All plies of roofing felt and moppings of pitch shall be carried up perpendicular surfaces at least six (6) inches.

Apply a uniform coating of KOPPERS Type F Asphalt to a height of not less than ten (10) inches on the perpendicular surface and four (4) inches out on the deck roofing into which embed one (1) ply of KOPPERS 15-Lb. Asphalt Felt cut so as to completely cover the coating of KOPPERS Type F Asphalt.

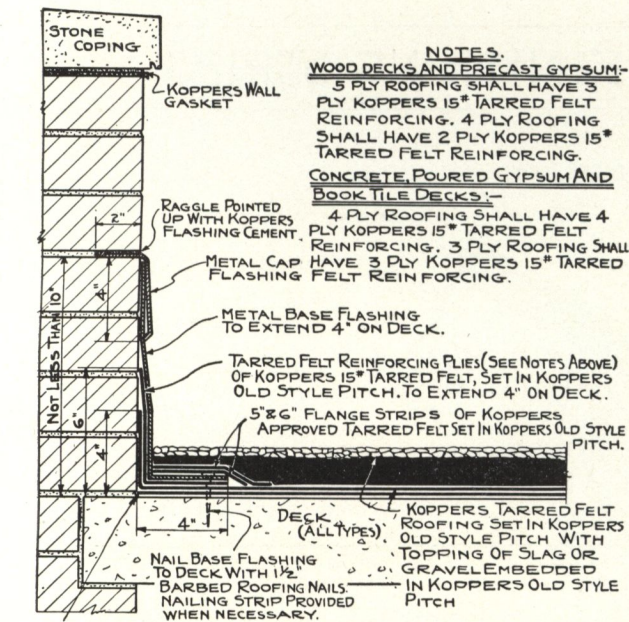
Coat this reinforcing strip of felt uniformly with KOPPERS Type F Asphalt and install another reinforcing ply of KOPPERS 15-Lb. Asphalt Felt. This strip to extend on to the deck roofing one (1) inch beyond the edges of the preceding strip.

Coat the entire surface of the asphalt felt flashing reinforcement strip uniformly with KOPPERS Type F Asphalt and embed immediately one (1) layer of eighty-five (85) pound mineral surfaced roofing cut so as to extend from the raggle to the deck angle. Reinforcing felt and mineral surfaced roofing shall be securely fastened at the top with one and one-half inch barbed roofing nails through flat tin discs to prevent slipping, nails to be spaced every ten (10) inches in the vertical mortar joints or nail strips.

All end joints of felt reinforcement strips shall break joints with underlying strip.

All felt reinforcement and mineral surface roofing strips shall not exceed ten (10) feet three (3) inches in length and there shall be a three (3) inch end lap between adjoining strips.

METAL CAP FLASHING. Refer to details explained following Specification No. 107.



NOTE:— FOR CONCRETE, POURED GYPSUM AND BOOK TILE DECKS, ALL PLIES OF ROOFING FELT SHALL BE CUT OFF AT WALL, FOR ALL OTHER TYPES OF DECKS 2 PLIES ROOFING FELT TO BE CARRIED UP WALL 4\"

Koppers Flashing Specification No. 100 (Not Bonded)

METAL CAP AND BASE FLASHING— KOPPERS SPECIFICATION No. 100

BRIEF SPECIFICATION (For Architects and Engineers)
The flashing shall be installed according to KOPPERS Specification No. 100.

DETAILED SPECIFICATIONS

APPLICATION. When a metal base flashing is used, felt reinforcement at all wall angles, skylight curbs and other vertical surfaces shall be installed as follows:

BOARD AND PRECAST GYPSUM DECKS. The felt in the first two plies of the roof shall be carried up perpendicular surfaces at least four (4) inches, and the remaining plies cut off at the angle of the roof deck and perpendicular surfaces.

(*) Felt reinforcing plies shall then be set in separately, all cemented solidly together and to the underlying surface with pitch. The first ply shall extend out on the deck roofing at least four (4) inches, each ply extending one (1) inch beyond the preceding ply, and up the perpendicular surface at least six (6) inches; the last ply to be mopped with pitch before the metal base flashing is set in place. All end joints shall be broken with the underlying reinforcing strip.

CONCRETE, POURED GYPSUM, BOOK TILE DECKS. All plies of felt used in the roofing shall be cut off at the angle of the roof deck and perpendicular surfaces.

(**) Felt reinforcing plies shall then be set in separately, all cemented solidly together and to the underlying surface with pitch. The first ply shall extend out on the deck roofing at least four (4) inches, each ply extending one (1) inch beyond the preceding ply, and up the perpendicular surface at least six (6) inches; the last ply to be mopped with pitch before the metal base flashing is set in place. All end joints shall be broken with the underlying reinforcing strip.

INSTALLATION OF METAL BASE FLASHING. The metal base flashing shall extend up the wall not less than ten (10) inches and on the deck not less than four (4) inches. The base flashing shall be nailed to the deck, and if deck does not permit nailing a creosoted wood nailing strip must be provided. Nails shall be spaced not more than four (4) inches apart and within one (1) inch from the outer edge of the metal base flange.

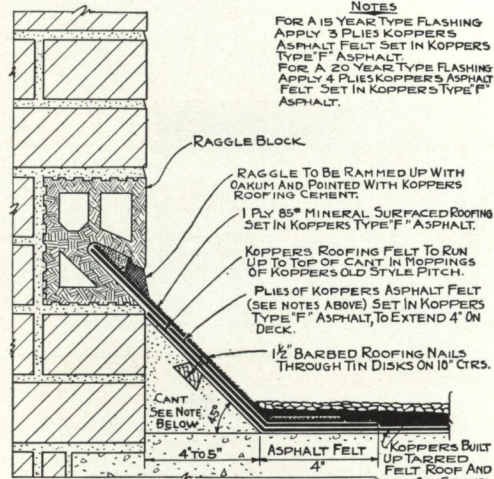
Two (2) tarred felt strips shall then be applied over the entire metal base flange which extends on to the roof, the top strip extending two (2) inches beyond the lower strip,

(Continued top of next column)

these strips to be not less than double the width of the flange and cemented solidly together and to the flange with pitch. Apply over the surface a mopping of pitch.

Cap Flashing shall be installed immediately so as to prevent seepage of water behind the base flashing.

- * 5 Ply roofing shall have three (3) reinforcing plies.
- ** 4 Ply roofing shall have two (2) reinforcing plies.
- ** 4 Ply roofing shall have (4) reinforcing plies.
- 3 Ply roofing shall have three (3) reinforcing plies.



NOTE: THIS DETAIL APPLIES TO CONCRETE, TILE, GYPSUM AND WOOD DECKS, EXCEPT THAT ON WOOD DECKS THE CANT STRIP IS TO BE WOOD.

Koppers Raggle Block Flashing Specification No. 102

KOPPERS RAGGLE BLOCK FLASHING SPECIFICATION No. 102

BRIEF SPECIFICATION (For Architects and Engineers)
The flashing shall be Raggle Block Type installed according to KOPPERS Specification No. 102.

DETAILED SPECIFICATIONS

APPLICATION. Extend all roofing plies of felt and mopings of pitch up the cant to the wall angle.

See that the flashing groove in the raggle block is free of all foreign material. Then apply a uniform coating of KOPPERS Type F Asphalt over the roofing and extend it full depth into the flashing groove. Next insert one (1) ply of KOPPERS 15-Lb. Asphalt Felt full depth into the Raggle Groove and extend it two (2) inches on to the roof deck. On top of the flashing reinforcement strip apply another uniform coating of KOPPERS Type F Asphalt and another flashing strip, this strip to extend on to roofing deck felts one (1) inch beyond the preceding strip. Repeat this application until a three (3) ply 15-Year Type or four (4) ply 20-Year Type reinforcement has been completed.

Felt reinforcement flashing strips shall not exceed ten (10) feet three (3) inches in length and there shall be a three (3) inch end lap between adjoining strips. A uniform coating of KOPPERS Type F Asphalt shall be applied between laps.

Each flashing reinforcement strip shall be set in separately and joints must be broken with the underlying flashing reinforcement strip.

The top of flashing reinforcement shall be nailed in the middle of the cant every ten (10) inches with one and one-half (1½) inch barbed roofing nails through flat tin discs.

Over the entire reinforcement strip, and into the full depth of the raggle apply a uniform coating of KOPPERS Type F Asphalt, into which embed one (1) layer of eighty-five (85) pounds Mineral Surfaced Roofing extending from the full depth of the raggle groove not less than three (3) inches on to the roof deck.

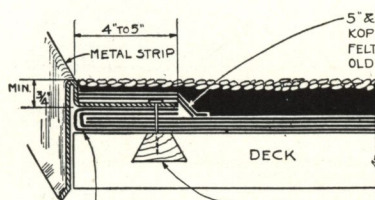
Mineral surfaced roofing strips shall not exceed ten (10) feet three (3) inches in length and there shall be a three (3) inch lap between adjoining strips. A uniform coating of KOPPERS Type F Asphalt shall be applied between laps.

Insert oakum into the full depth of the raggle groove, pressing firmly into place, then fill the raggle completely with KOPPERS Roof Cement.

GENERAL. All asphalt felt and mineral surfaced roofing shall be free from wrinkles and buckles.

TYPICAL METAL FINISHING STRIPS

EAVE # 1000



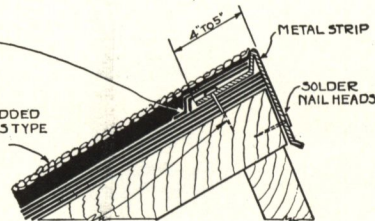
5' x 6' FLANGE STRIPS OF KOPPERS APPROVED TARRER FELT EMBEDDED IN KOPPERS OLD STYLE PITCH.

SLAG EMBEDDED IN KOPPERS TYPE 3 ASPHALT

NAILS, SPACE 1" FROM EDGE OF METAL STRIP AND 3" APART. CREOSOTED WOOD NAILING STRIP FURNISHED WHEN DECK DOES NOT PERMIT NAILING.

2 LOWER PLIES OF ROOFING FELT ARE TO BE TURNED UP OVER TOP PLIES OF FELT AND RUN BACK ON DECK AT LEAST FIVE INCHES.

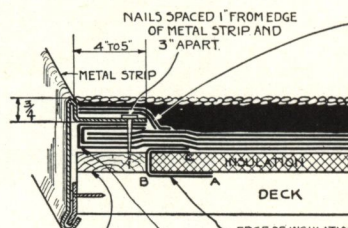
RIDGE # 1001



FOR GRAVEL AND SLAG ROOFING WITHOUT INSULATION

FOR GRAVEL AND SLAG ROOFING WITH INSULATION

EAVE # 1002

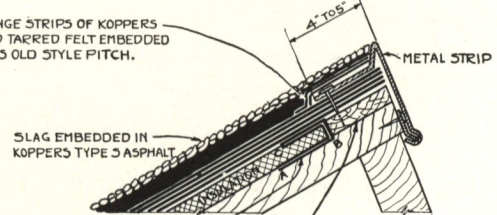


CREOSOTED EDGING STRIP. SEE NOTE OPPOSITE.

2 LOWER PLIES OF ROOFING FELT ARE TO BE TURNED UP OVER TOP PLIES OF FELT AND RUN BACK ON DECK AT LEAST 5 INCHES

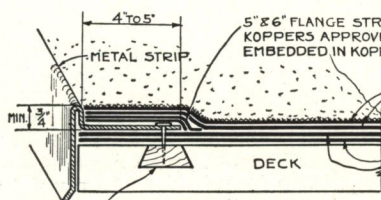
EDGE OF INSULATION TO BE SEALED WITH 2 PLIES TARRER FELT STRIPS, EXTENDING 6" UNDER INSULATION AND 5" OVER INSULATION. WITH CONCRETE, POURED GYPSUM, PRECAST CONCRETE AND BOOK TILE DECKS MOP WITH PITCH FROM POINTS A TO C. ON STEEL DECKS WITH KOPPERS TYPE 3 ASPHALT. WITH WOOD AND PRECAST GYPSUM DECKS MOP WITH PITCH FROM POINTS B TO C AND NAIL FELT STRIPS SECURELY TO DECK. WHEN THERE IS WATERPROOFING UNDER INSULATION EXTEND WATERPROOFING PLIES OF FELT AND MOPPIINGS OF PITCH SO THAT THEY CAN BE TURNED BACK OVER THE TOP OF INSULATION 5".

RIDGE # 1003



NOTE: CREOSOTED WOOD EDGING STRIP SECURELY FASTENED TO DECK CUT TO THE SAME WIDTH AS METAL FLANGE AND THE THICKNESS OF THE INSULATION.

SIDE EAVE # 1004

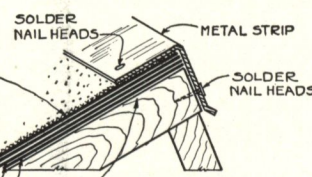


NAILS SPACED 1" FROM EDGE OF METAL STRIP AND 3" APART. CREOSOTED WOOD NAILING STRIP FURNISHED WHEN DECK DOES NOT PERMIT NAILING.

MINERAL SURFACED ROOFING EMBEDDED IN KOPPERS TYPE 3 ASPHALT

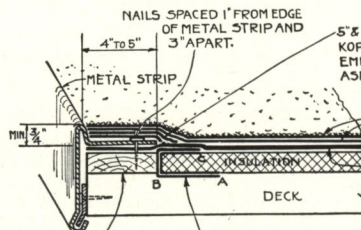
2 PLY KOPPERS APPROVED TARRER FELT NAILED TO DECK IN THE CASE OF WOOD OR PRECAST GYPSUM DECKS. 1 PLY FELT EMBEDDED IN KOPPERS TYPE 3 ASPHALT IN THE CASE OF CONCRETE, POURED GYPSUM, STEEL DECK ETC.

RIDGE # 1005



FOR MINERAL SURFACED ROOFING WITHOUT INSULATION

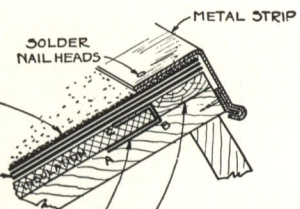
SIDE EAVE # 1006



CREOSOTED EDGING STRIP. SEE NOTE OPPOSITE.

EDGE OF INSULATION TO BE SEALED WITH 2 PLIES TARRER FELT STRIPS EXTENDING 6" UNDER INSULATION AND 5" OVER INSULATION. WITH POURED CONCRETE, POURED GYPSUM, PRECAST CONCRETE, BOOK TILE AND STEEL DECKS MOP WITH KOPPERS TYPE 3 ASPHALT FROM POINTS A TO C. WITH WOOD OR PRECAST GYPSUM DECKS MOP WITH TYPE 3 ASPHALT FROM POINTS B TO C AND NAIL FELT STRIPS SECURELY TO DECK. WHEN THERE IS WATERPROOFING UNDER INSULATION EXTEND WATERPROOFING PLIES OF FELT AND MOPPIINGS OF ASPHALT SO THAT THEY CAN BE TURNED BACK OVER THE TOP OF INSULATION 5".

RIDGE # 1007



NOTE: CREOSOTED WOOD EDGING STRIP SECURELY FASTENED TO DECK CUT TO THE SAME WIDTH AS METAL FLANGE AND THE THICKNESS OF THE INSULATION.

FOR MINERAL SURFACED ROOFING WITH INSULATION

DAMPPROOFING AND WATERPROOFING

Almost any concrete or masonry structure which is not effectively waterproofed eventually will show the destructive effect of water, to some degree. The cost

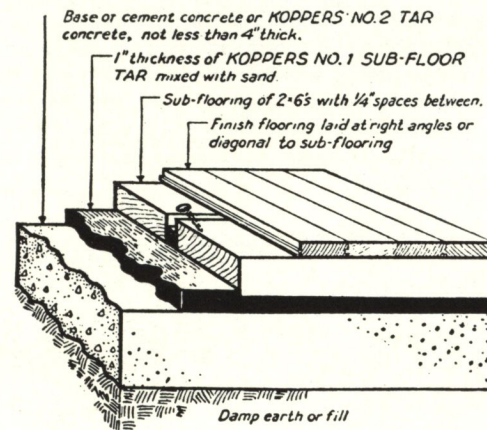
of waterproofing or dampproofing is negligible compared to the cost of the structure, yet it prolongs the life of the structure and insures the investment.

KOPPERS SUB-FLOOR TAR DAMPPROOFING

In basements where the ground is damp and it is desired to use a wood finish floor, an effective dampproofing is necessary. The earth should be leveled off to proper grade. If earth or cinder fill is used it should be puddled and rolled or tamped to thoroughly compact it. The sub-base may be either a cement-concrete slab installed in the usual way, or a slab of KOPPERS No. 2 SUB-FLOOR TAR concrete. A cubic yard of crushed stone or gravel passing a $2\frac{1}{4}$ " sieve but retained on a $\frac{1}{4}$ " sieve is mixed with approximately 10 gallons of KOPPERS No. 2 SUB-FLOOR TAR which has been heated. This should be thoroughly rolled or tamped and brought to accurate grade.

Over the slab the dampproofing course is placed. One cubic yard of clean torpedo sand is heated (210° to 250° F.) and mixed with 25 to 30 gallons of KOPPERS No. 1 SUB-FLOOR TAR at the same temperature. The mixture is spread evenly over the slab to a thickness of from $1\frac{1}{4}$ " to $1\frac{1}{2}$ " and leveled with a straight edge.

Well dried or treated planks are laid on this soft mixture before it cools and bedded by hammering, so that the coating compacts to a thickness of 1". If any plank is hammered below level, it is raised and more of the mixture applied beneath it. After the planks have been brought to proper level they are toe-nailed together. The sub-floor planks are preferably pressure treated with coal tar creosote meeting the Grade 1 specifications of the American Wood Preservers' As-



sociation. In food factories, creameries, etc., where the odor of creosote might be objectionable, the planks should be treated with a suitable salt preservative such as zinc chloride or Wolman salts. Planks to be creosoted should be dried before treatment. When a salt preservative is used, the planks should be dried after treatment, whether or not they were dried before treatment.

The finish floor is then laid at right angles or diagonal to the planks in the usual manner.

KOPPERS SPECIFICATION FOR THE INSTALLATION OF CREOSOTED WOOD BLOCK FLOORING

BRIEF SPECIFICATION (For Architects and Engineers)

All creosoted wood block flooring shall be laid in accordance with Koppers Specifications.

USES. Creosoted Wood Block Floors are used in machine shops, factories, trucking platforms, warehouses, and other places where a durable and smooth floor is desired. Creosoted wood block floors eliminate much of the noise usually found in manufacturing plants.

APPLICATION. KOPPERS Wood Block Pitch shall be heated to 275° F. and then flushed or poured over the concrete base in a thin uniform coating. (Approximately 7 pounds per square yard.)

On the hardened pitch surface the blocks shall be set tightly together with the fiber of the wood vertical, in straight parallel courses with the length at right angles to the line of traffic. Space for expansion joints one (1) inch wide shall be left against the walls surrounding the entire

floor, as well as around all columns and other obstructions.

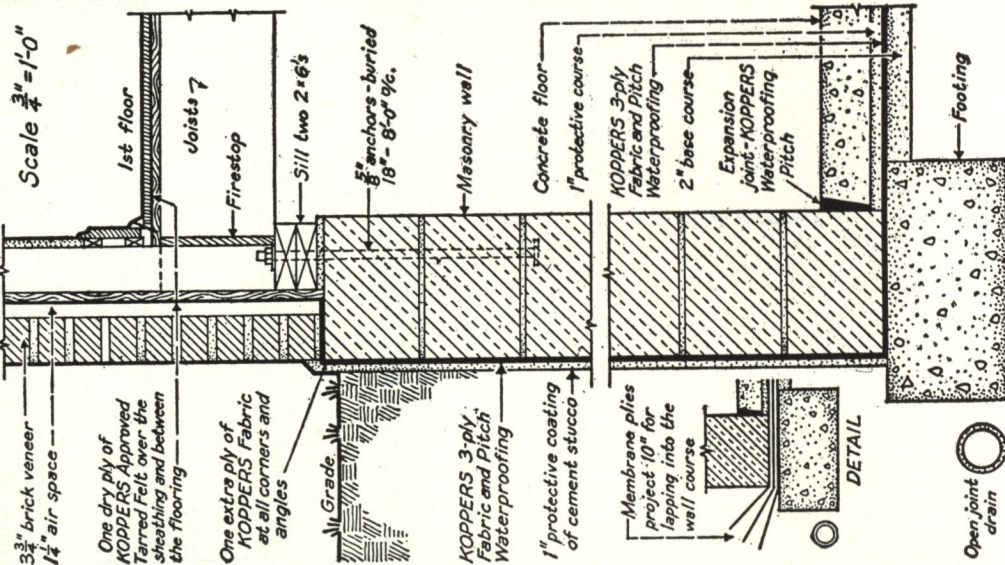
After the blocks have been properly placed, KOPPERS Wood Block Pitch (heated to 275° F.) shall be poured into all spaces left for expansion joints so as to fill them up to the floor level. The hot pitch shall then be flushed over the floor using a rubber edged squeegee to force it into the crevices between the blocks. Not more than a light film of pitch should be left on the surface of the floor. The surface of the floor shall then be covered with sharp, fine sand, which shall be permitted to remain under traffic for a week or ten days and then removed. The light film of pitch on the surface of the blocks will wear off rapidly under traffic. Approximately eight (8) pounds of pitch per square yard will be required for filler—provided footage of expansion joints in the floor is normal.

Note—Blocks may be laid on worn out concrete floors and other uneven surfaces if a sand mastic cushion is provided. Write for details.

PENCIL POINTS DATA SHEETS
**WATERPROOFING OF
 RESIDENCE FOUNDATIONS**

Prepared by Don Graf, B.S., M.Arch.

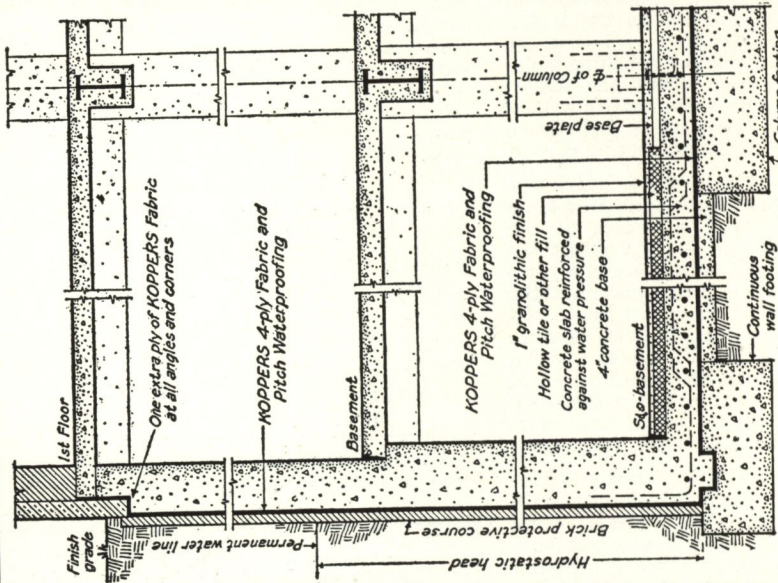
Sheet No.
F9
KOPPERS
 PRODUCTS CO.
 PITTSBURGH



PENCIL POINTS DATA SHEETS
**WATERPROOFING OF
 DEEP FOUNDATIONS**

Prepared by Don Graf, B.S., M.Arch.

Sheet No.
F9
KOPPERS
 PRODUCTS CO.
 PITTSBURGH

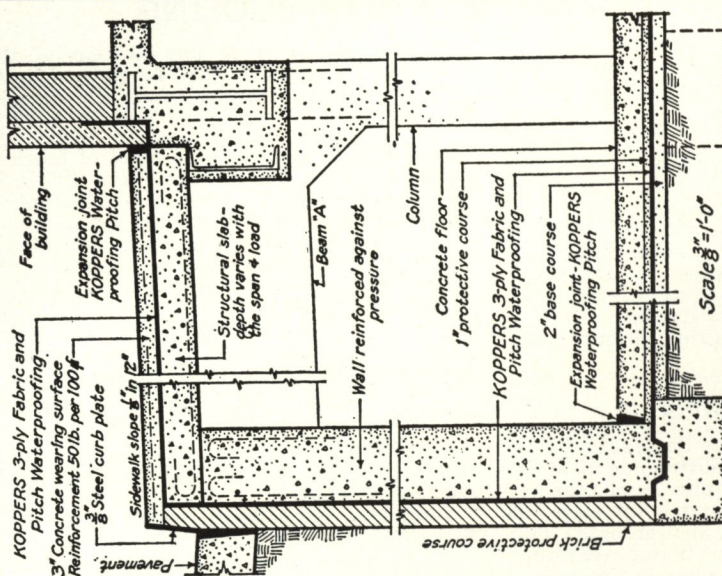


In the construction of deep basements having unfavorable water conditions, the waterproofing method is shown here. The KOPPERS 4-ply Fabric and Pitch Waterproofing membrane will withstand a hydrostatic head up to 18'. From 18' to 25' 5 plies are used. A sheet of 20-oz. soft rolled copper should be placed between the plies beneath all columns, posts or walls under which the pressure exceeds 400 lbs. per sq. inch. The sub-basement floor is reinforced as a flat slab to resist the upward pressure of the water. Inverted beams may be used, but these necessitate a greater amount of fill to bring the construction to a level to receive the wearing surface. If piles are used, the footings shown above become the pile cap-pings. No dowels need be run through the membrane.

PENCIL POINTS DATA SHEETS
**WATERPROOFING OF
 SIDEWALK VAULT**

Prepared by Don Graf, B.S., M.Arch.

Sheet No.
F9
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Expansion joint-KOPPERS Waterproofing Pitch

The problem involved in constructing sidewalk vaults is to provide for movement of the concrete to eliminate cracking, and at the same time to exclude water so that the space may be usable. A 1" expansion joint should occur at the building line as shown. Others should occur at proper intervals at right angles to the building face as shown in the detail at the left. The membrane acts as a flexible dam in the joint, retaining the filling of pitch. To facilitate the movement of the slabs, 2 dry plies of KOPPERS Approved Tarrd Felt are placed between the bottom of the slab and its bearing surface on beams or wall, thus breaking the joint.

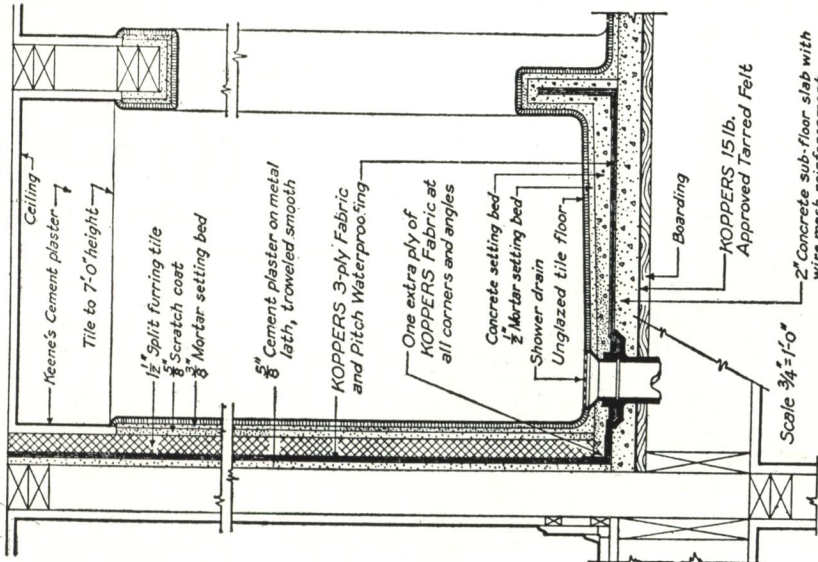


PENCIL POINTS DATA SHEETS

Sheet No. **D6**
KOPPERS
PRODUCTSCO.
PITTSBURGH

Prepared by Don Graf, B.S., M.Arch.

SHOWER BATH CONSTRUCTION



The usual sizes for shower stalls are as follows:—30 x 36, 30 x 42, 36 x 36, 36 x 42, 42 x 42. Where space permits, the largest size given is desirable. Showers less than 36 x 36 in the clear should only be planned when space conditions make it mandatory. The door opening may be closed either with a water-proof curtain or any of the standard shower stall doors having ventilating panels.

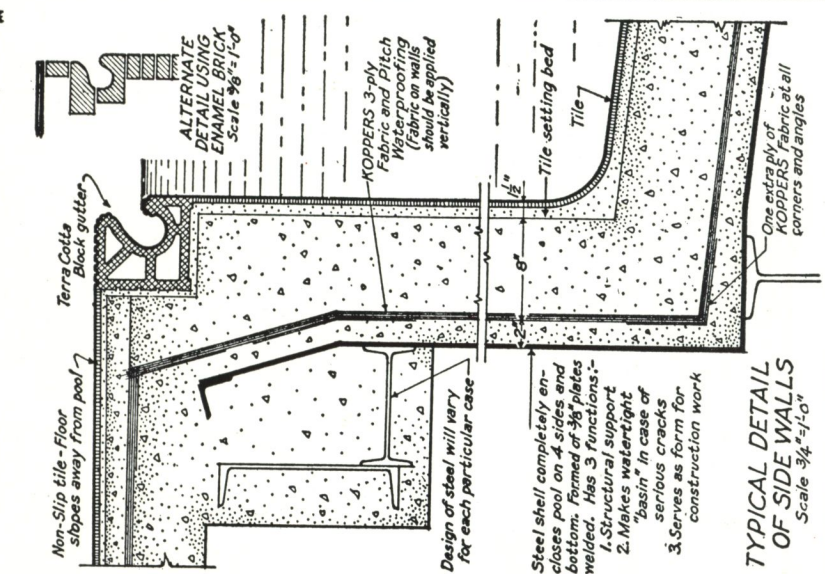
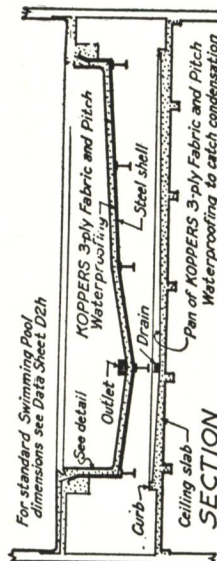
The floor of the shower should be of an unglazed or abrasive tile, to prevent slipping. Glazed or unglazed tiles may be used for the walls at the discretion of the designer. Floor drains vary from 1 1/2" to 3" wastes. The larger the better.

PENCIL POINTS DATA SHEETS

Sheet No. **D2**
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PITTSBURGH

Prepared by Don Graf, B.S., M.Arch.

INDOOR SWIMMING POOL



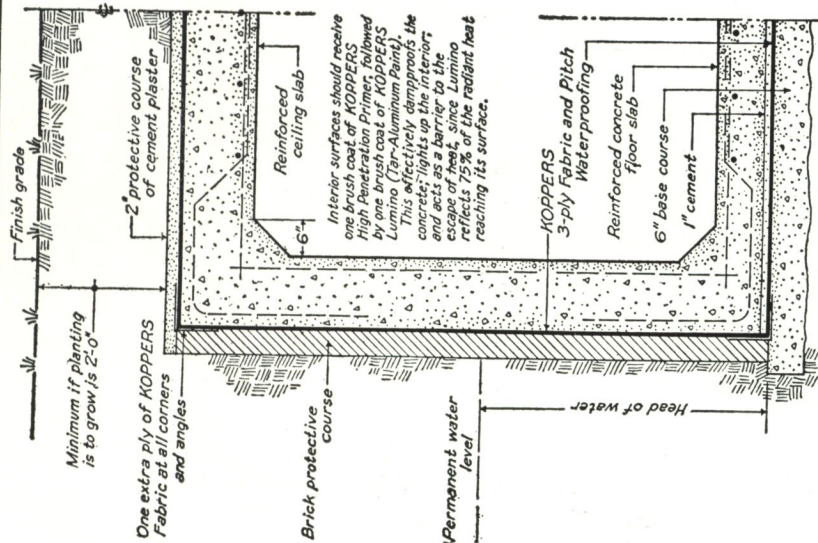
TYPICAL DETAIL OF SIDE WALLS
Scale 3/4" = 1'-0"

PENCIL POINTS DATA SHEETS

Sheet No. **F9**
KOPPERS
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PITTSBURGH

Prepared by Don Graf, B.S., M.Arch.

SUBTERRANEAN TUNNEL TO CONNECT BUILDINGS



Frequently it is necessary to construct subterranean tunnels from one building to another, either for a passageway for circulation of people, or as a conduit to contain pipes and ducts. If the soil will retain ground water, or if the passage extends below the permanent water level, an effective waterproofing is necessary as shown above. This forms an unbroken envelope through which moisture is unable to penetrate. The thickness of the floor slab and the reinforcing will depend upon the span and the head of water to be resisted. The thickness and reinforcing of the walls depend upon the height and the water head. The detail of the roof or ceiling slab will depend upon the span and the weight of earth to be sustained.

OTHER **KOPPERS** PRODUCTS

ROAD MATERIALS

Koppers Tarmac—

For construction, maintenance and repair of highways, streets, private driveways, plant roads, pavements, playgrounds, etc.

WOOD PRESERVATIVES

Koppers Coal Tar Creosote
Koppers Creosote Coal Tar Solutions
Koppers Anthracene Oils
Koppers Shingle Stain Oils

PITCH COKE

A low ash carbon for the chemical and metallurgical industries

CRUDE NAPHTHALENE

Standard 74° and 76° grades

CRUDE TAR

Coke Oven Tar Vertical Retort Tar
Horizontal Retort Tar Water Gas Tar

REFINED TAR

Mold Wash Tar Pipe Dip
Fish Net Tar Saturating Tar

TAR ACIDS

AND

TAR ACID OILS

Phenol (82% and 90%)
Cresol (U. S. P., 3° Meta-Para
Resin and plasticizer
grades)
Cresylic Acid (Disinfectant and
insecticide grades)
Tar Acid Oils (15-25-35%)
Flotation Oils

LIGHT OILS

Benzol Xylol
Toluol Solvent Naphtha

AGRICULTURAL PRODUCT

Tree Spray Oil

BITUMINOUS PAINTS

Koppax Black Paints

KOPPERS PRODUCTS COMPANY

GENERAL

Koppers Building, 100 South Street, New York, N. Y.

SALES OFFICES

NEW YORK, N. Y., Koppers Building
BOSTON, MASS., 100 South Street
PROVIDENCE, R. I., 100 South Street
CHICAGO, ILL., 39th Street and
WOODWARD, ALA. (Phone 400-
ST. LOUIS, MO., 400-
ST. LOUIS, MO., 400-

PLANT

BUFFALO, N. Y.
CARROLLVILLE, WIS.
CICERO, ILL.
FOLLANSBEE, W. VA.
WOODWARD, ALA.
HAMILTON, N. Y.
KEARNY, N. J.
NEW HAMPSHIRE
PROVIDENCE, R. I.

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OTHER **KOPPERS** PRODUCTS

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For construction, maintenance and repair of highways, streets, private driveways, plant roads, pavements, playgrounds, etc.

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Koppers Shingle Stain Oils

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CRUDE NAPHTHALENE

Standard 74° and 76° grades

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Coke Oven Tar
Horizontal Retort Tar

Vertical Retort Tar
Water Gas Tar

REFINED TAR

Mold Wash Tar
Fish Net Tar

Pipe Dip
Saturating Tar

TAR ACIDS

AND

TAR ACID OILS

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Cresol (U. S. P., 3° Meta-Para Resin and plasticizer grades)
Cresylic Acid (Disinfectant and insecticide grades)
Tar Acid Oils (15-25-35%)
Flotation Oils

LIGHT OILS

Benzol Xylol
Toluol Solvent Naphtha

AGRICULTURAL PRODUCT

Tree Spray Oil

BITUMINOUS PAINTS

Koppax Black Paints
Lumino Aluminum Paint
Heat Resisting Paints
Acid-Proof Paints
Paint Base Tars and Pitches

KOPPERS PRODUCTS COMPANY

GENERAL OFFICES

Koppers Building, PITTSBURGH, PA.

SALES OFFICES

NEW YORK, N. Y., Koppers Building, Harrison Turnpike, Kearny, N. J.
BOSTON, MASS., 250 Stuart Street
PROVIDENCE, R. I., Industrial Trust Building
CHICAGO, ILL., 39th Street and 52nd Avenue, Cicero, Ill.
WOODWARD, ALA. (Phone and Wire—Birmingham, Ala.)
ST. LOUIS, MO., 4000 Bingham Avenue

PLANTS

BUFFALO, N. Y.
CARROLLVILLE, WIS.
CICERO, ILL.
FOLLANSBEE, W. VA.

WOODWARD, ALA.

HAMILTON, OHIO
KEARNY, N. J.
NEW HAVEN, CONN.
PROVIDENCE, R. I.

YOUNGSTOWN, OHIO

ST. LOUIS, MO.
ST. PAUL, MINN.
SWEDELAND, PA.
UTICA, N. Y.

